

ITEMS OF INTEREST.

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ORIGINAL COMMUNICATIONS.

WORLD'S COLUMBIAN DENTAL CONGRESS.

Reported for ITEMS OF INTEREST by Mrs. J. M. Walker.

The World's Columbian Dental Congress convened in the hall of Washington Art Institute, Chicago, Monday, August 14th. The vast auditorium was well filled with the representatives of the dental profession from all parts of the world.

The session was called to order by Dr. W. W. Walker, New York, Chairman of the Executive Committee, who introduced Hon. C. C. Bonney, President of the World's Congress Auxiliary.

Dr. J. Taft, Cincinnati, invoked the Divine blessing.

President Bonney then addressed the Congress in words of kindly, appreciative welcome. His address showed unusual comprehension of the true value of the dental profession to humanity. We can only give the following brief abstract:

The science and practice of the art of dentistry most conspicuously represents one of the most important movements of the age—the specialization of scientific pursuits. The old fields of research and application were so narrow that they were readily mastered by the learner and practitioner, who scarcely realized indeed the importance and the magnitude of the different branches to which, as occasion required, he turned his half-trained hand. All this has been changed by the marvelous development of modern civilization. The horizon of scientific attainment has been lifted and extended, till only a powerful glass can trace its outlines. In the swiftly developing evolution of arts and sciences, the great work of logical and orderly differentiation has gone forward, subdividing the professional and other pursuits, till now he, who would command the confidence of his brethren and the public, must have more than a general knowledge of the department in which he is

engaged. That, indeed, is indispensable, but it is not enough. The general physician and surgeon cannot be trusted to deal with the exact mechanism of the eye or ear, or with the important and delicate relations of the teeth. A life-time may be spent and the highest abilities and attainments be exercised in their field. The old-fashioned tooth-carpenter, with his entirely appropriate name has, like the Dodo, become an extinct species, and in his place we find the modern doctor of dental surgery, accomplished, learned, and skilled, familiar with anatomy, histology, etiology, pathology and bacteriology, chemistry and metallurgy, as well as with the practical operations of the art.

In welcoming you to this Congress, I congratulate you on the admirable program by the Committee of Organization, and on the international character of the papers to be presented. Germany, Austria, Scotland, Armenia, Greece, Finland, Norway, England, and other countries unite with the American States in this Congress. May it realize your past expectations, and be fruitful of the most satisfactory results.

At the conclusion of his address, President Bonney introduced Dr. W. W. Walker, who spoke as follows:

President Bonney, and Officers and Members of the World's Columbian Dental Congress; Ladies and Gentlemen:—After the very flattering remarks and most cordial welcome of our esteemed friend, the President of the World's Congress Auxiliary, the Hon. C. C. Bonney, it is hardly necessary for me at this time to recapitulate that which has so often been placed before the reputable dentists of the world by this Executive Committee in circular letters, through the dental journals and other dental literature, as to how the World's Columbian Dental Congress was born and organized. Suffice it to say it was the joint resolution of the two foremost societies of America, the Southern Dental Association and the American Dental Association, that this Executive Committee of fifteen should organize a Dental Congress in this city at this time, and that their action should be final.

The Executive Committee have done only that which we considered our duty. We have laid aside all personal feeling, if any ever existed; we have been working hand in hand and shoulder to shoulder to accomplish for our chosen profession that which places it where it should so justly and truly be placed, in the front rank of scientific professions of the world.

In the performance of that duty many obstacles have arisen, but "there is no such word as fail" in our vocabulary, and with

the assistance of those who have worked with us, the results before you have been accomplished.

Dr. L. D. Shepard, Boston, President of the World's Columbian Dental Congress, was next introduced.

Letters regretting inability to attend the sessions, on account of illness, were read from Drs. W. W. H. Thackston, Farmville, Va., and Prof. W. H. Morgan, Nashville, Tenn.

The members of the Executive Committee of the General Committee of the World's Congress Auxiliary, and of the Committee of the Women's Branch, was also introduced by name.

A telegram having been received from Hon. John Temple Graves, Georgia (the orator selected for the occasion), announcing his serious illness, Dr. J. Y. Crawford, Nashville, Tenn., welcomed the foreign representatives in a glowing speech.

President Shepard then called Vice-President, A. R. Northrop, to the Chair and delivered his inaugural address, of which we can give only a brief outline, as follows :

Dr. Shepard traced the history of the Dental Congress from its inception three years ago down to the present grand culmination. He then followed the evolution of modern dentistry as embraced within the span of one human life, dismissing so-called ancient dentistry as having given us nothing of value coming down from antiquity; for as an *art* dentistry is modern—as a *science* it is essentially modern. The early history of dentistry in this country he left to the Committee on History. There are no sharp lines of demarcation in evolutionary processes, and in their review we find the changes to be so gradual and long-continued that it is difficult to fix on a time which is so distinctively marked as to be called a natal day. As most nearly proximating such an epoch for modern dentistry he selected the date of the organization of the first dental college in the world—the Baltimore College of Dental Surgery in 1839, followed in the next year by the establishment of the first dental periodical in the world (the *American Journal of Dental Science*) the organization of the first dental society, the American Society of Dental Surgeons—the great tripod on which all professional advancement must rest—the college, the journal and the association.

What was probably the first dental law in any country was the dental law of the State of Alabama, enacted in 1841, which stood alone for over twenty-five years, the next law enacted being that of New York, in 1868. The most salient points in the history of dentistry were brought out very clearly, beginning with that most

notable and beneficent discovery—anesthesia, beginning with the discovery of the anesthetic qualities of nitrous oxid gas by Dr. Horace Wells, in 1844; the anesthetic use of ether by Dr. Morton, in 1846; of chloroform by Dr. Simpson, in 1847, and the revival of the use of nitrous oxid, in 1862. The next great epoch was marked by the introduction of crystal gold and the discovery of the cohesiveness of freshly annealed foil, which laid the foundation for a new era in operative dentistry—the new era of restoration in place of antique mutilation and disfiguration. This was necessarily supplemented by improved instruments—the mallet, the rubber-dam and the engine. Dr. Shepard next spoke of the ebbs and flows of the tide of prosthetic dentistry; its culmination in the perfection of porcelain or continuous gum, its debasement through the abuse of vulcanite, and its greatest glory the modern system of crown and bridge-work, the climax of our art. He spoke of the increasing interest in the deeper causes of physiological function and of pathological departure from normality. Histological investigations have been pushed with great enthusiasm and thoroughness, and the advances in other departments of microscopic research are largely due to methods which were first devised and employed in the study of dental tissues by ingenious dental microscopists. These fields of research are inviting to the student, but demand great courage and self-denial when cultivated by those whose labors are severe and fatiguing in the daily routine of the office. He said, we rejoice that there are so many dentists throughout the world who are devoting their energies, after the day's work is done, to these problems. We shall be encouraged as well as edified through the week by the display of results already achieved.

Crude and speculative seem the theories of dental caries which obtained less than a score of years ago when contrasted with the brilliant demonstrations of the renowned American professor of Berlin, founded on patient and protracted investigation after the most approved modern scientific methods. Though from unavoidable circumstances detained at home, he has shown his interest and coöperation by forwarding a paper. There are many others whose fame is not bounded by their vocation or their country. They are known to the world as scientists and cosmopolitans. However skilful and judicious a dentist may be as an operator, this sphere of his usefulness is limited in space and not far-reaching, while these men are working for mankind at large and for succeeding generations. In view of past victories, may we not confidently expect that the etiology of other still obscure diseases, like erosion

and pyorrhea, may be solved, so that we can either prevent or successfully treat them?

He spoke of the so-called new departure and the increasing use of plastics, which has made a great change in practice, and has been of incalculable benefit to humanity.

Of the theory of the bacterial origin of disease and antisepsis, which has engrossed much study and attention, he said: We may be on the eve of a solution of all etiology by the isolation of the specific pathogenic germ of every disease, and that to prevent or cure, all that was necessary was to ascertain and administer the proper germicide. Clinical records, however, have failed to sustain the ardent expectations of the more sanguine. The germicide has taken a place subordinate to a strict observance of absolute cleanliness, and we acknowledge the importance of *vis vitæ* as a factor in securing immunity from the attacks of bacteria everywhere present.

Light, however, is being shed on many mysterious bacterial phenomena by a more thorough acquaintance with ptomaines, leucomaines, and the extractives which are toxic and auto-intoxicants. Fortunate practical results have come in the character of a great reform in the care of instruments and the sterilization of everything connected with operative work.

All through the years there has been an underlying hope that improvement of tissue and greater resistive power would result from advances in prophylaxis. Apart from the improved conditions resulting from changed manipulation like contouring, or greater care in cleanliness, little has been accomplished in purely dental prophylaxis. Special feeding for the teeth, or treatment in the line of therapeutics, has not rewarded patient trial.

The tendency of prophylaxis to-day is to develop along physiological lines by more special and minute observance of the laws of hygiene. Proper food, its preparation for assimilation, out-door exercise, in a word, rational methods of living, are no more important for the preservation of health than for the building up of tissues throughout the whole body, of such perfectness of structure and function as to be able successfully to resist deleterious attacks. Thus viewed, prophylaxis has made great strides, in which the teeth have shared as part of the general economy.

In concluding, he said: As dentists we meet here to-day, brothers of one family, with common interests, mutual respect, and unity of aspiration and expectations. With much care and labor the banquet has been prepared, and we are invited to partake of

the ripest fruits of professional culture which could be gathered from every quarter. Let us partake joyfully, not for the pleasure of the day alone, but from the consciousness that each feast brings with it the earnest of greater strength to-morrow. Let us all improve the opportunities presented, that this week may be so full of inspirations and valuable results that it shall be a milestone in the march of professional progress.

The representatives of foreign countries were each welcomed by the President of the Congress.

Dr. Geo. Cunningham, Cambridge, England, in acknowledging the welcome tendered, expressed his regrets that English dentists, who had been appointed honorary officials, had been compelled to bow the head to the decision of the representative associations of England, adverse to rendering official delegates. He reiterated the assurance, that there was no antagonism to the Congress or its objects; and that many who had been obliged to decline the honors proffered, had, nevertheless, done active work in connection with the committee, as a token of this kindly feeling and desire to participate in the work of the Congress.

Dr. Jno. E. Grevers, Amsterdam, Holland, offered the sincere congratulations of his country on the prodigious success of the Congress, and of those who projected this grand universal reunion.

Dr. Erich Richter, Berlin, Germany, responded on behalf of the German Association of American Graduates in Germany and the Berlin Dental Association, which unites American with German degrees. He said that Germany and German dentists has had an awakening from their slumbers by the astounding progress of American dentistry, and the chasm that had excluded American dentistry has been bridged. He said that while the etiology had been discovered in Germany, the honor belongs to America; the discoverer, P. D. Milles, being an American dentist.

Dr. Otto Zsigmondy, Vienna, Austria, extended thanks on behalf of the people of Austria, and the wishes of his colleagues for the unlimited success of the Congress.

Dr. Barriè, of Paris, France, tendered the greetings of the Association Générale of Dentists of France, and of the Dental School of Paris.

Dr. C. H. Portuondo, of Madrid, though a Spaniard, he was a graduate of an American college, and was more than happy to return to this country, and wished the Congress the highest success.

Dr. Louis Roussey, Geneva, Switzerland, and Dr. Antonio Damiano, Mila, of Genoa, representing the Odontological Society

of Italy, and Dr. Caracatsanis, Athens, Greece, responded for their respective countries.

Dr. Paul Adilheim, Moraro, Russia, sent telegraphic greetings.

Dr. J. S. Barrett, of Uruguay, and Dr. E. M. Flagg, Paraguay, claimed that the welcome received and the benefits to be gained amply repaid the journey of about eleven thousand miles.

Dr. Alfred Burne, Sidney, New South Wales, presented the greetings of the dental association of that far-off country.

Dr. Evans, Paris, sent a letter expressing his regret that he was unable to attend the Congress, but his desire to see the Lafayette Home (Paris) for young ladies studying art in Europe completed by October next, made it his duty to remain in Paris.

Dr. J. M. Whitney, Honolulu, Sandwich Islands, declined a seat among the representatives of foreign countries, as the United States was so soon to annex his country and make him a citizen of the United States.

Dr. R. H. Kimball, Shanghai, China, said that though representing a very large country, he regretted to say they had no association of dentists, and that he represented Asia only individually.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

Reported for ITEMS OF INTEREST by Mrs. J. M. Walker.

The twelfth annual meeting of the National Association of Dental Examiners was held in Chicago, August 11th; the President, Dr. W. E. Magill, in the Chair. Owing to the death of Dr. Fred. A. Levy, the late Secretary, Dr. Edgar Palmer was appointed temporary Secretary. The following States responded:

California—J. D. Hodgen.

District of Columbia—William Donnally and H. B. Noble.

Illinois—C. Stoddard Smith.

Indiana—M. H. Chappell and S. T. Kirk.

Kansas—A. W. Callahan.

Kentucky—C. S. Edwards.

Louisiana—Joseph Bauer.

Maine—D. W. Fellows.

Massachusetts—J. Searle Hurlbut.

Mississippi—W. E. Walker.

New Jersey—G. Carlton Brown and J. C. Barlow.

Ohio—L. E. Custer and James Silcott.

Pennsylvania—C. N. Fratzer, Louis Jack and W. E. Magill.

Tennessee—H. E. Beach and J. Y. Crawford.

Wisconsin—Edgar Crawford.

The following resolution was laid over to the next meeting.

Resolved, That it is the sense of the National Association of Dental Examiners, that when a member of the dental profession presents a certificate of registration from a State Board of Dental Examiners, duly created by law, that the same should entitle the holder of such certificate to registration without an additional examination in any State of the Union having a law to regulate the practice of dentistry; *Provided*, Such certificate was obtained on examination.

Reports were received from the following State Boards: Wisconsin, Kentucky, California (verbal), Illinois (verbal), District of Columbia, Maine, Pennsylvania, Massachusetts, and Kansas.

A report from the Committee on Dental Colleges, that it be established as a preliminary condition to the reception of applications to be placed on the list of recognized colleges be admission to the National Association of Dental Faculties, was adopted.

Applications received at this meeting lie over till next year.

Of the recognized schools for the season of 1892-93 the number of students was: Freshmen, 1,429; Juniors, 927; Seniors, 433; Graduates, 320; Post-Graduates, 44; one school not having reported. Of the unrecognized schools the number of students was: Freshmen, 111; Juniors, 54; Seniors, 22; Graduates, 20.

The following is a list of colleges recognized by the National Association of Dental Examiners as reputable, as reported by the Committee on Colleges for 1893 and 1894:

1. Baltimore College of Dental Surgery, Baltimore, Md.
2. Boston Dental College, Boston, Mass.
3. Chicago College of Dental Surgery, Chicago, Ill.
4. College of Dentistry, Department of Medicine, University of Minnesota, Minneapolis, Minn.
5. Dental Department, Columbian University, Washington, D. C.
6. Dental Department, National University, Washington, D. C.
7. Northwestern University Dental School, formerly Dental Department of Northwestern University (University Dental College), Chicago, Ill.
8. Dental Department of Southern Medical College, Atlanta, Ga.
9. Dental Department of University of Tennessee, Nashville, Tenn.
10. Harvard University, Dental Department, Cambridge, Mass.
11. Indiana Dental College, Indianapolis, Ind.
12. Kansas City Dental College, Kansas City, Mo.

13. Louisville College of Dentistry, Louisville, Ky.
14. Missouri Dental College, St. Louis, Mo.
15. New York College of Dentistry, New York City.
16. Northwestern College of Dental Surgery, Chicago, Ill.
17. Ohio College of Dental Surgery, Cincinnati, Ohio.
18. Pennsylvania College of Dental Surgery, Philadelphia, Pa.
19. Philadelphia Dental College, Philadelphia, Pa.
20. School of Dentistry of Meharry Medical Department of Central Tennessee College, Nashville, Tenn.
21. University of California, Dental Department, San Francisco.
22. University of Iowa, Dental Department, Iowa City, Iowa.
23. University of Maryland, Dental Department, Baltimore, Md.
24. University of Michigan, Dental Department, Ann Harbor, Mich.
25. University of Pennsylvania, Dental Department.
26. Vanderbilt University, Dental Department, Nashville, Tenn.
27. Western Dental College, Kansas City, Mo.
28. Minnesota Hospital College, Dental Department, Minneapolis, Minn. (Merged into No. 4.)
29. St. Paul Medical College, Dental Department, St. Paul, Minn. (Merged into No. 4.)
30. American College of Dental Surgery, Chicago, Ill.

The election of officers for the ensuing year was then proceeded with, resulting as follows: C. Searle Hurlbut, President; M. H. Chappell, Vice-President; J. D. Hodgen, Secretary and Treasurer, 917 Sutter street, San Francisco, Cal.

Composure is very often the highest result of strength. Did we never see a man receive a flagrant insult and only grow a little pale, and then reply quietly? That was a man spiritually strong. Or did we never see a man in anguish stand as if carved out of solid rock, mastering himself? Or one bearing a hopeless daily trial remain silent and never tell the world what it was that cankered his home peace? That is strength. He who with strong passions remains chaste; he who, keenly sensitive, with manly power of indignation in him, can be provoked and yet refrain himself and forgive, these are strong men, spiritual heroes.

It is not one tremendous effort that will make us good, or great or skillful, but a constant succession of struggles.

NATIONAL ASSOCIATION DENTAL FACULTIES, 1893.

Reported for ITEMS OF INTEREST by Mrs. J. M. Walker.

The tenth annual meeting of the National Association of Dental Faculties was held in Chicago, August 10th, 1893.

The following colleges were represented by delegates :

Dental College, University of Michigan—J. Taft.

University of California, Dental Department—C. L. Goddard.

University of Pennsylvania, Dental Department—James Truman.

Chicago College of Dental Surgery—Truman W. Brophy.

Indiana Dental College—J. E. Cravens.

Columbian University, Dental Department—J. Hall Lewis.

Pennsylvania College of Dental Surgery—C. N. Peirce.

State University of Iowa, Dental Department—A. O. Hunt.

New York College of Dentistry—Frank Abbott.

Dental Department of National University—J. Roland Walton.

Northwestern University Dental School—C. P. Pruyn.

American College of Dental Surgery—Louis Ottofy.

Baltimore College of Dental Surgery—M. Whilldin Foster.

Harvard University, Dental Department—Thomas Fillebrown.

Missouri Dental School—W. H. Eames.

College of Dentistry, Department of Medicine, University of Minnesota—W. Xavier Sudduth.

Louisville College of Dentistry—F. Peabody.

University of Maryland, Dental Department—F. J. S. Gorgas.

School of Dentistry, Meharry Medical Department of Central Tennessee College—G. W. Hubbard.

Vanderbilt University, Dental Department—Henry W. Morgan.

Kansas City Dental College—J. D. Patterson.

Boston Dental College—J. A. Follett.

Northwestern College of Dental Surgery—B. J. Roberts.

Ohio College of Dental Surgery—H. A. Smith.

Philadelphia Dental College—S. H. Guilford.

Dental Department of Southern Medical College—L. D. Carpenter.

It was resolved that only one delegate from each college should speak, vote, or act on committees.

It was ruled that the by-law on dissections was mandatory.

In the reports from colleges, Dr. Gorgas, University of Maryland, Dental Department, stated that his college had under consideration the adoption of separate lectures for the three classes.

Dr. Morgan, Vanderbilt University, Dental Department, had abandoned the preliminary course, and would give the students a practical course at the end of the session, or about the middle of January.

Dr. Sudduth, College of Dentistry, Department of Medicine, University of Minnesota, has changed the degree from D.D.S. to D. M. D.

Dr. Goddard, University of California, Dental Department, had added Latin to the entrance examination.

The application for membership of the Western Dental College, Kansas City, was again laid over for a year. Also, the applications of the University of Buffalo, Dental Department; the Western Reserve University, Dental Department, of Cleveland; and Howard University, Dental Department, Washington, D. C.

The recommendation of the Executive Committee of the Detroit College of Medicine, Dental Department, was adopted, and the college elected to membership. That of the Homeopathic Hospital College, Cleveland, Ohio, was rejected, and referred back to the committee for further investigation.

The Executive Committee reported adversely on the United States Dental College.

The resolution offered by Dr. Winder, in regard to the admission of graduates in pharmacy to advanced standing, was lost, but a similar resolution, offered by Dr. Peirce, was amended and adopted as follows :

Resolved, That colleges of this Association may admit to the junior class graduates of recognized schools of pharmacy, subject to the examination of the freshman year.

The following resolution, laid over from last year, was also adopted :

Resolved, That any college of this Association, failing to have a representative present for two consecutive years, without satisfactory explanation, shall be dropped from the roll of membership of the Association.

Dr. Sudduth moved that Latin and physics be added to the list of subjects for entrance examination to the colleges belonging to the Association.

This lays over for a year.

Dr. H. W. Morgan offered the following resolution, which was laid over for one year :

Resolved, That a certificate of attendance from a medical school to be accepted as the equivalent of one course in dentistry, must show that the

student attended at least 75 per cent of a five months' term, and also passed a satisfactory examination in his freshman year.

The Executive Committee reported the following resolution, which was adopted :

Resolved, That a committee be appointed to formulate a series of subjects and questions for preliminary examinations and a minimum standard to be reached before admitting students to colleges.

The election of officers resulted as follows : H. A. Smith, Cincinnati, President ; C. L. Goddard, San Francisco, Vice-President ; J. E. Cravens, Indianapolis, Secretary ; Henry W. Morgan, Nashville, Tenn., Treasurer ; A. O. Hunt, Iowa City, Ia. ; J. Taft, Cincinnati ; Frank Abbott, New York, Executive Committee ; James Truman, Philadelphia ; Thomas Fillebrown, Boston ; W. H. Eames, St. Louis, *Ad Interim* Committee.

The newly elected officers were installed, the retiring and incoming Presidents each returning thanks briefly and gracefully.

The following committees were appointed :

Committee on Schools, J. A. Follett (Chairman), F. J. S. Gorgas, Louis Ottofy, C. N. Peirce and Truman W. Brophy.

Committee on Text Books, S. H. Guilford (Chairman), J. D. Patterson, Thomas Fillebrown, A. O. Hunt, J. Hall Lewis.

Special Committee to Prepare Subjects and Questions for Preliminary Examinations, Francis Peabody, W. Xavier Sudduth, Henry W. Morgan.

Adjourned to meet at the call of the Executive Committee.

The American Dental Association had a mere formal meeting at Chicago, transacting but little business, preferring to become absorbed in the General Dental Congress. This was magnanimous, and must have added materially to the interests of the General Congress. It adjourned to meet at Old Point Comfort in 1894.

Men who succeed in any calling, combine several very important elements of character. Faith, and talent, and ambition, and energy will win wonders of success. Perhaps the great difference among men of all callings, is energy of character, or want of it. It takes nerve, vim, perseverance, patient continuance in well doing, to win a great prize. And the young man who goes into a profession without this pluck and force will fail.

THE CARBO-HYDRATES AS A FACTOR IN TOOTH DECAY.

Dr. R. C. Young, Anniston, in Alabama Dental Association.

Reported for ITEMS OF INTEREST by Mrs. J. M. Walker.

He prefaced the reading by presenting for examination a bottle containing a tooth which had been immersed in a weak solution of lactic acid for forty-eight hours, as a practical illustration, and proof of the position taken in his paper here were briefly outlined. Dr. Young made the claim that no one science had done so much for the civilization and comfort of the human race as chemistry; the very life we live is a series of chemical changes, and it may be that the strange and wondrous power we call LIFE, *per se*, may be the result of some chemical action, hidden by an all-wise Providence from the knowledge of man. The chemical laboratory is the armory, the chemist the craftsman who forges the arms with which the physician combats disease and suffering and oftentimes baffles death. Were there no chemical changes going on in the mouth there would be no dental caries. Bacteria take a very active part in the destructive work of caries, but in themselves they are powerless; their great ally is hydrogen, in combination. There can be no caries without an acid, and no acid has any affinity for the lime salts of the teeth but those containing hydrogen. The most prolific source of acids in the mouth is the fermentation of the carbo-hydrates, or starch-containing foods, amylaceous substances adhering to the teeth for considerable length of time. This fermentation is produced by bacteria. It is impossible to have putrefaction or fermentation of organic substances without the presence of microorganism. Saliva added to starch or sugar, and kept at blood temperature, will become acid in twenty-four hours. Sterilize the starch before adding the saliva, and we still have an acid reaction. Sterilize the saliva and we have no such reaction. In the mouth, at ordinary temperature, the starch food is first converted by the ptyalin of the saliva into grape sugar; this, in turn, is converted into lactic acid by the bacteria. The acid unites with the lime salts in the enamel of the teeth, forming lactate of lime. The first indication of decay is a white, chalky condition of the enamel, which is easily scraped off, and under the microscope is found to consist of enamel soda, or prisms and bacilli, the most common microbe concerned in the decay of the teeth. When, by this process, the mineral matter is

leached out the acid action ceases, the acid having but little, if any, action on the albuminous substance of the dentine. But these animacule have the power of peptonizing albumen. Thus we have the alternate action of the acid demoralizing the inorganic substance, and the peptonizing action of the bacteria on the animal basis, till, if mechanical interference is not instituted, the entire organ is destroyed. It is not claimed that this is the only source of decay, but it is undeniably the most prolific. The secretion of the mucous follicles, remedies prescribed by physicians, the formation of nitric-acid in the oral cavity, breathing, all play a part, but régime is the most effective agent through the fermentation and putrifaction of albuminous matter. In the experiments made by Miller (of Berlin), fresh saliva was mixed with different food articles. Bread and boiled potatoes give prompt acid reaction; meat and eggs show an alkaline reaction. Among the Ganchos of South America, those inhabiting the plains and subsisting on flesh are said to be free from caries, while those of the same tribe who live in the cities, and eat a mixed diet, are far from being so fortunate. Dental caries is almost unknown among the Esquimaux, a meat-eating people, while the Laps, a kindred tribe, who subsist on bread, beans, potatoes, etc., show nearly 20 per cent of caries. Decay is exceedingly rare in the carnivora, while it is not the exception in the phytophagous classes of the lower animals. I believe decay is a chemical vital action, due largely to the fermentation of the carbo-hydrates, through the action of or producing bacteria in the mouth. This gives us a clew how to hold the disease in check. And, in fact, how to some extent to overcome the cause.

While it is not within the range of possibilities to eliminate from the régime of civilized man these amylaceous food substances and confine them to a meat diet, yet, by mechanical and chemical means we can keep the mouth—*caeteris paribus*—in such a state that much can be done to overcome deleterious environments, using first the brush and floss, and then the application of antiseptics used as washes. Corrosive sublimate will thoroughly sterilize the mouth, but for general use this drug is not advisable, owing to its toxic properties and its disagreeable taste, and the fact that it discolors the teeth.

The following mouth wash will prove beneficial :

R. Thymol.....	gr. iij.
Benzoic Acid.....	gr. xlv.
Tinct. Eucalyptus.....	
Alcohol.....	℥ v.
Oil Wintergreen,	
Oil Peppermint.....	āā gtts. xx.
	M.

S.—Add to water to produce a decided cloudiness, and use as a mouth wash after each meal.

This paper was discussed at some length by Drs. Chisholm, Noel, Pearson, Browne, Crawford, and Young.

Dr. L. G. Noel said that in 1874 he had endeavored to put before the American Dental Association, in as clear a manner as possible, the molecular reaction of saliva on cooked starch in the formation of lactic and acetic acid. The office of the saliva is not so much to prepare the food for deglutition as to fit it to enter the blood. In another paper, read much later, at Old Point Comfort, he endeavored to show the analogy between caries and digestion. Caries is a "digesting out" of the lime salts from the animal matrix of the tooth. Still later, at Niagara, he had another paper on the same line. On the latter occasion Dr. Atchison was the only man who raised his voice in discussion, and he "simply took the hide off of me." Dr. Noel added: "Dr. Atchison had the art of making a man appear very small, but he sometimes backed you down into the wrong corner." Dr. George Watt, on the other hand, wrote to Dr. Noel, "My boy, you're right!" Dr. Noel continued, I do not believe bacteria cause pus, but I believe we find them wherever its fermentation is going on, because there they find something there to feed on. I believe this function is wholly catalytic. There can be fermentation without the presence of bacteria, but not putrefaction. Caries spreads, as shown by Dr. Miller, by the proliferation of microscopic organisms, which penetrate the tubuli of the dentine. The destructive action is the same, whether it results from catalytic action or by the pressure of increasing numbers, breaking down of the walls of the tubuli.

Dr. E. S. Chisholm: It will require the work of a life time in microscopical studies to comprehend bacterial action. We know acids break down the lime of the tooth, and this is what we are most practically concerned with. Acids are the great enemy of the teeth, and are all-sufficient for the work of destruction. Bacteria may continue the work, but as they are everywhere, and we cannot exclude the atmosphere or keep the mouth cold or dry, we cannot exclude bacteria, and we must get in our work of protection

before the bugs begin, and we will have enough to do. It makes no difference what acid produces decay, or whether different acids produce decay of different colors. What we have to do is to correct the acid conditions by preventive measures.

Dr. W. G. Browne asked if dentistry could offer any explanation of what observation had shown him to be a fact—that a sudden inroad of extensive rapid white decay, in a person over forty years of age, meant something radically wrong in the system. When I hear that a man has broken down soon after I have found his teeth in that condition, I look for his death very shortly after.

Physicians in making a diagnosis should take more note of the condition of the teeth. In people who are overworked, I am persuaded that the condition described means *dissolution*.

Dr. Young: It means that the kidneys are all wrong. It is the work of uric acid. I believe that the condition of the teeth is an important factor in diagnosis. Where the teeth disintegrate as described by Dr. Browne, you can smell uric acid on the breadth. The trouble lies with the kidneys, and the patient will probably never recover. Local conditions induced by mouth-breathing may also create white decay, due to the combination of oxygen with nitrogenous matter in the mouth, creating nitric acid. In the mouth breather the teeth are unnaturally dry. Sulphuric acid produces black decay. I predict that in ten years from now a physician will as regularly say, "Let me examine your mouth," as he now feels the pulse, in determining the general condition.

Dr. J. Y. Crawford: I am not a chemist—I have forgotten all that I learned in the three weeks I studied it. But all my investigations in dental caries have not changed the opinion I formed as long ago as 1873—that it is a chemico-vital process; the result of an acid condition of the saliva, in which the most prominent factors are lactic and acetic acid. My hobby, if I have one, is the importance of the recognition of the condition of the oral cavity as a factor in disease. If we can satisfactorily solve the problem of dental caries, and how to prevent it, it will be the stepping stone towards the comprehension of the wonderful phenomena of disease in the human system. If we knew more of its *modus operandi* we could do more towards combating its purposes. Let us labor hard, discuss intelligently, look more deeply, into pathological conditions. Let us not be empirics but scientific workers. Physicians repudiate us because we do not agree among ourselves. If we undertake to define the etiology, the pathology of some dental lesion, let four

men take the floor, and each one of the four will set forth a special theory of his own. But if we were in touch with scientific medicine, fanaticism would be held in check. The dentist ought to stand on the same platform with the doctor; he is a healer, not a mechanic. His practice imposes on him equally high responsibilities. But we are stigmatized as mechanics—tradesmen.

Dr. Young: A brighter day is dawning. We have taken deep draughts from the fountain of medicine. It rests with ourselves *per se* how we stand with the medical profession. The time has long since passed since we were looked on as mechanics, and it hurts me to hear it said by one of ourselves. Let us put our shoulders to the wheel. Let every dentist claim his place in the Medical Congress this summer.

In answer to a direct question Dr. Young said his own usual diet was a cup of tea and a bowl of oatmeal and milk for breakfast; a beefsteak sent to his office for lunch, and another beefsteak, with rice, potatoes and tea for dinner. He then reads till twelve or one o'clock, exercises with Indian clubs and goes to bed. He reiterated his opinion that American diet is a most prolific source of decay, this being the universal testimony of foreigners. In aboriginal jaws the teeth were massive and well formed. They were used to triturate the corn as God gave it. Light white bread is no doubt beautiful to the eye and palatable to the taste, but it is not what God intended us to live on.

Ethics was discussed by Drs. G. M. Rousseau, Crawford, and Chisholm. Dr. Crawford said that in view of the coming World's Dental Congress it was most timely now to study up the written law of ethics, as the great majority do not understand all that it means. The code of ethics is designed for protection of both the public and the profession. It is not more in the interests of one than of the other, the interests of all parties demand the observation of the code, and it is essential that the true intent of the code be thoroughly comprehended. Its laws are immutable. They are fixed by a higher power, and based on charity and common sense. Dr. Crawford commented with great severity on the endorsement of patent nostrums by ministers, who, in violation of all the laws of ethics, lend their printed signatures, and, even in some cases, their pictures to such endorsement. He considers that by this pernicious custom they do more harm than can be counterbalanced by the good done in a lifetime. It weakens their influence, impairs confidence of thinking men, and paralyzes their power for good.

ORTHODONTIA. — ITS PRESENT STATUS AND MOST APPROVED FORMS OF APPLIANCES.

Dr. W. W. Vance, Kearney, Neb.

In the consideration of appliances for irregularities, it is necessary that the teeth shall move slowly and be of such construction as to be worn for some little time without great inconvenience, while the tooth is becoming firm in its new location. It should also be such as can be cheaply and quickly made, easily kept clean, and so designed that the daily attention of the dentist will not consume much time. We see almost daily, cases of protruding lower or upper anterior teeth, that are otherwise regular, which are a standing menace to the skill of dentists or a disgrace to parents or guardians of children, who might, if proper care were given with moderate skill be made presentable and comfortable. We also occasionally see cases where the lower teeth incline inward, carrying the upper molars and bicuspid with them, by the tendency of the cusps to slide into each other, till by their inclined or slanting position, the maxillary bones are allowed to come closer together, and the upper anterior teeth forced forward till the under incisors actually impinge on the gum, back of the upper teeth. The teeth are crowded out of their proper place by the tardy development of the dental arch, or the neglect to extract a deciduous tooth at the proper time; and a tooth from no clearly defined cause, seems to be growing from a direction so much to one side of the place from which it should point, as it begins to erupt. Thus are made most of the irregularities we are called on to correct.

The successful correction of these by men who have given the subject much time and study, has made it necessary for the rank and file of dentists to fully acquaint themselves with the means to successfully cope with them.

Dr. Angle's lectures and demonstrations have furnished a good means for correcting irregularities. Dr. Kingsley has also given us great help.

In a system of springs, preferably of piano wire, described by Dr. V. H. Jackson, several very good points are given, but as a system, complete in itself, I consider it rather too difficult to construct. Besides, I do not consider force applied for the purpose of moving teeth, by springs, so good as definite pressure made by a screw, such as is described by Dr. Angle in his system. The greatest difficulty I have met in his system is that, without very careful

construction, the pressure on bands will sometimes break the cement, and they will come off the tooth, and there is frequently a tendency to move the tooth used as a base. To avoid this it often becomes necessary to make a band for either one or both teeth, proximating the tooth desired to be moved, and attaching a brace, or full back, so that you exert force against two or three teeth as your base from which movement is to be made.

I think, however, that the Angle system contains more unobjectionable features than others I have had the pleasure of investigating. It is easily and cheaply constructed, and not particularly uncomfortable to the wearer.

One becomes proficient in the use and application of anything, just in the proportion that it suits his fancy; consequently it provides his mind and inventive genius with a sort of guide that perhaps other devices, containing equally good points and as much real merit, would not. As a result, he naturally falls into the habit of doing things in his way and gets good results; while another would utterly fail with the same system of appliances. But I do not think the Angle system offers obstacles that cannot be surmounted by anyone accustomed to making crowns. Of course, the system presumes that there shall be carefully made, well fitting bands.

I will cite a case or two that may demonstate a few errors into which we are likely to fall, and suggest ways by which they may be obviated.

The first has reference to the necessity of reinforcing the tooth used as a base from which you propose to obtain your force.

A cuspid closed back of line of alveolar ridge, and when the teeth were brought together, locked the jaws, preventing any lateral or antero-posterior movement. The first molar on the opposite side of mouth had been extracted. I banded the second molar and extended a spur against the third molar, so that both would have to be moved, if the second molar was not sufficiently firm to stand the push. I constructed the telescoping brace, attached a band to the cuspid and commenced. The cuspid was very firm but gradually began to move, when, after three or four days, I noticed that molars were also moving. Soon they were moving about all that the brace elongated, while the cuspid did not budge any further. I then had to suspend operations and take the device out and solder an extra pipe on the band, on molar, and attaching a band to each of the teeth proximating the cuspid, that is, the lateral incisor and first bicuspid, with pipes soldered to these bands. I made a

double-ended hook engaging the pipe on the molar band, which now gave me four teeth for my pressure. Allowing sufficient time for the molars to become firm again, I inserted the appliance, and the tooth moved without trouble.

The second case was one in which the upper teeth closed inside of the proper position all the way around, making it necessary to expand or widen the arch, also to move the anterior teeth forward, as they closed back of the lower teeth.

In this case I fitted bands to the second molar on both sides, and also to the first bicuspid on each side. I had pipes fitted to the bands in a horizontal position and wires running through these pipes. Then I bent a stiff piece of brass wire so as to conform to the curvature of the palatine arch; a horizontal pipe soldered to one end and to the other a pipe so situated that it would be at right angles to the wire passing from the bicuspid to the molars when in position. Into this pipe a telescoping screw, with a pipe soldered on the end, like a T, intended to fit on the wire passing from bicuspid to molars, and short pieces of pipe placed one on each side, to prevent the arch brace from working backward and forward. The appliance was placed in position and movements toward reposition proceeded without further trouble. When the arch was sufficiently widened to admit of proper articulation, further turning of the screw was stopped, and the appliance left in position for three or four weeks, that the teeth might become firm. This they seemed to do; but when I removed the appliance, and went to work to construct another for moving the anterior teeth to position, what was my chagrin to find the teeth slowly going back to their original position, and the consequent necessity of reinserting the appliance and again moving them to their proper place. The appliance is still *in situ*, and while the teeth seem firm, I thought to profit by past experience and leave them long enough to prove a success. The difficulty was insufficient time for the process to fill in behind the teeth, and the slanting or inclined position of the cusps gave the teeth a tendency to slide inward in the process of mastication.

The remedy I would suggest would be to leave the appliance in for some time, or to make some retaining appliance that could be worn long enough to be certain that the deformity would not return.

These cases have not been cited as anything of unusual intricacy, but merely to demonstrate where mistakes are liable to occur, and to suggest a means for their prevention.

OPERATIVE DENTISTRY.

Dr. E. S. Chisholm, in Alabama Society.

Reported for ITEMS OF INTEREST by Mrs. J. M. Walker.

Filling teeth is of more practical importance to dentists than any other one thing, as it occupies fully three-fourths of their time. Of these operations the most complicated and difficult are involved in the preservation of the incisor teeth, on account of the very thin walls left, when the intervening dentine has been destroyed by the decay. He said that as the result of many years of experience, he had reduced it to a definite system which he proposes to make clear for the benefit of the younger members of the Association, as the most reliable method of preserving the form, color, and strength of these most essential teeth, and of preventing the recurrence of decay.

Dr. Chisholm then placed in view a blackboard on which was written:

FILLING TEETH—CEMENT—CHISHOLM'S METHOD AND DISCUSSION IN
ALABAMA ASSOCIATION.

1. Excavate all decay.
2. Trim all sharp edges.
3. Always secure three retaining points or angles.
4. Smear the surface of cavity with cement of creamy consistency.
5. Anchor crystallized gold before cement hardens.
6. Project amply beyond curvical wall.
7. On this build with cohesive gold.
8. Condense with small instruments against the walls.
9. Build out to full contour.
10. Cautiously key the gold, using small instruments.
11. Dress filling down to cavity border.
12. Dress down and burnish again.

Dr. Chisholm then proceeded to enlarge on three different steps of his "method." The exception to the rule of excavating *all* decay is in case the nerve is nearly exposed, in which case a layer of decalcified dentine may be left in the bottom of the cavity, but all decay must be thoroughly cut out at the circumference, or point of entrance to the cavity.

The margins must be trimmed with disks and sandpaper, leaving nothing weak and frail or liable to break, especially in the superior centrals and laterals.

The necessity for three retaining points was illustrated by the homely fact that a pot cannot stand on two legs; it must have three at least.

The coating of cement must be very light. A cavity cannot be filled as thoroughly and perfectly with gold alone as with this combination of cement and gold. The cement hugs the walls of the cavity, fills in all the corrugations of the gold, like mortar for bricks. If kept in the bottom of the cavity and not allowed to reach the margins, no moisture can reach it, and it will never dissolve out. Such a filling will last a lifetime. A mere film of cement makes a perfectly air-tight filling. The crystalloid gold must be imbedded before the cement hardens. When the walls are very thin the cement prevents the dark look caused by gold shining through.

Objection was raised to this method that there was danger in the liability of the cement to be driven out to the margins of the cavity, causing leakage and disintegration; also that it would be difficult to get the gold in position before the cement hardened; also of devitalizing the nerve when very nearly exposed by placing oxyphosphate over it, with only a layer of decalcified dentine between. The combination of cement and crystalloid gold was compared to nuts in sugar candy, liable to crumble up and fall out. Dr. Chisholm replied to these various criticisms that he did not offer this method as a fancy or a theory. It has stood, in his hands, the test of years. Such a thin film of cement will never hurt the nerve, but every interspace is filled in, and the filling is as solid as the rock of Gibraltar.

Dr. Rosser thought the cements too uncertain to be relied on.

Dr. Stewart thought the only advantage the cement offered would be in disguising the color of gold through the thin walls.

Dr. H. C. Boyd said he was rather extreme in his appreciation of the cements. He used cement to save the tooth, and then covered with gold to save the cement. His only criticism of Dr. Chisholm's method would be that he used too little cement. Instead of a "mere film" of cement, he would say a mere veneer of gold.

Dr. McAnally said he would feel uncertain how much force to use in malleting gold over cement.

Dr. Truman thought it possible that in cement mixed as thin as described, the large proportion of phosphoric acid might be sufficient to endanger the pulp, but he had never had any bad results from such use of the cements, either oxychlorid or oxyphosphate. If the pulp was already in an irritated condition

mastic varnish or gutta-percha would be as liable to be followed by the death of the pulp. For the incisors he would use the cements, protected with gold, but for the posterior teeth he would use tin, especially at the cervical margins. He is convinced that it is the conservator of tooth structure. In all large posterior proximal cavities begin with a layer of tin foil, and you may hope to save the teeth if the gums are healthy. If the cavities are very close down to or under the gum margins, lay a strip of tin foil across from one cavity to the other; put your matrix down over that and carry the tin well down over the margins of both cavities. Then with cotton, by Herbst's rotary motion, force the tin down to the cervical margins. Remove the cotton, and you may fill the rest of the cavity with cement, and it will never wash out and the teeth will not decay any further.

Dr. R. C. Young said that the inlays cemented in, had given him an idea which he often found of practical value. When a tooth is very sensitive and the patient nervous and hard to manage—those cases where it is next to impossible to cut the tooth enough for proper retaining points or under cuts, shape gum cavity very simply—saucer-shaped if you cannot do better; insert a well-condensed polished filling, then punch it out, and cement it in like an inlay, first washing both the cavity and the filling with absolute alcohol. The first time it was the result of an accident, the filling unfortunately coming out just as it was about finished. It was too late in the day to build up another, so he quietly cemented it in, expecting to renew it, but it seemed in such fine condition the next day that he concluded to let it alone and see what the result would be. It proved so perfectly satisfactory, that he has adopted that method for teeth that are so sensitive, or the patient so hard to control, that it is difficult to properly shape a cavity for the mechanical retention of large gold filling.

Dr. S. W. Foster has had a similar experience in cementing in a filling late in the day, but the patient was so well satisfied that he never came back, and he lost his fee!

HE COULD NOT HELP IT ANYHOW.—Dentist (*just returned from an enthusiastic meeting where the allegiance to the sacred dental code of ethics was unanimously declared*).—O, me, what a wretched hypocrite I am! How can I stop the mouths of those who are advertising me with the work I have done for them?

Wife.—But, dear, if you'd spared the *dam*, you'd spoiled the *code*.

THE BEST MEANS OF OBTUNDING SENSIBILITY OF THE
DENTINE. SHOULD ARSENIC EVER BE USED?

Dr. H. F. Coyle, and Discussion in the Nebraska Dental Society.

What causes sensibility in the dentine of a tooth? It is the opinion of our best writers, and generally accepted, that it is the dentinal fibrilla, those fine microscopical nerve fibers which ramify in all directions through the tubuli of the dentine, that our instruments and other foreign agencies come in contact with, that causes pain.

And how best to relieve that sensibility, which in some teeth is almost unbearable, is a question that confronts us every day of our professional life.

It is these exceedingly sensitive lesions of the teeth that make the dentist very much to be dreaded by most.

As one who loves his profession and has a deep sympathy for suffering humanity, I should certainly be derelict of duty did I not hail with "joy and gladness" any method of practice, any drug or compound that will alleviate pain and tend to make these necessary operations easier for our patients to bear.

But do not ask me to use any combination of drugs, the make of which I am totally ignorant.

I quote from an editorial in the February *Dental Review* that expresses my views exactly. When a new remedy is offered coming through proper channels, try it—if valuable use it, but let severely alone all others. A practitioner is liable to prosecution for malpractice who uses applications, the ingredients of which he is unacquainted. Let the young dentist remember that no remedy really valuable can long be kept a secret, and let him not be disturbed because the man across the street is seemingly carrying the day by the use of his "painless dentistry."

In the treatment of sensitive dentine, is the exclusion of the moisture. I have seen a great many nervous, jerky, twitching patients entirely calmed and controlled simply by adjusting the rubber-dam. Another is a smooth, even disposition of the operator. Clean hands, clean morals, and steady nerves.

You have seen the dentist that would seem to chill your whole being the moment you enter his office. Some seem more richly endowed by nature than others, but I believe it is within the province of all to cultivate these higher instincts till the angles and corners in our dispositions, are rubbed fairly smooth.

Keen, sharp, fine-edged instruments are a necessity. See

that your excavator is in proper shape before endeavoring to send it into that diseased tissue. Our instrument makers have done a great deal in the last twenty years to make the dreaded operation of filling teeth more endurable, but in my opinion there is great room for improvement, especially in our engine burs. The larger sizes are too coarse. They should have almost double the number of knives—more like what is called “plug finishing burs,” but with very sharp edges—then the engine would not need to be run so rapidly. I am satisfied that much unnecessary pain is inflicted on our patients by too rapidly revolving the engine, thus heating the tooth.

Do not attempt to use a bur after it is dull. If the dentine is hard, as we like to find it, and very much burring is necessary, the instrument is not fit to use the second time without being recut.

There is no remedy that I have ever seen that will act the same on all teeth, and we should be well acquainted with the nature of what we use.

Any thing of deep penetrating power should be used with great caution. Such as chlorid of zinc. In shallow, labial, or buccal cavities, that are sensitive, it is almost impossible to touch them, but by washing the cavity with carbolic acid following with crystals of chlorid of zinc, the result is marvelous.

I have in a great many cases had very excellent results with what is known as Robinson's remedy. Herbst's Obtudent is a very valuable agent in a great many cases. It is made by getting a saturated solution of hydrochlorate of cocain in chemically pure sulphuric acid and add sulphuric ether till all is thoroughly saturated, allowing excess of ether to escape by evaporation.

But the most satisfactory with me is the chlorid of ethyl spray. It acts by dehydration—freezing. In a very few seconds work can be done without pain. But owing to the fluid being exceedingly volatile the effect does not last more than two minutes.

But this must be used with caution. I have had no death of the pulp from its use to my knowledge, but have refrained from using it where I thought the pulp was near.

Recognizing arsenic as poison of deep penetrating power—power to penetrate the tubuli and cause the destruction of the pulp, if confined only a few days where there is but slight exposure of dentine, I unhesitatingly say that it should never be used in any combination whatsoever, unless the object is to destroy the pulp. If used to obtund sensibility, sooner or later the death of the pulp will generally follow.

DISCUSSION.

W. C. Davis, D.D.S., Lincoln, Neb.: The subject of Dr. Cole's essay is quite important. I have heard prominent practitioners remark that they "did not have time to obtund sensitive dentine. If the patients could not stand it, they must stay away." This is inhuman, and a blow not only at one's individual practice, but the future success of the profession of dentistry. What is pain? It is the sensation caused by irritation.

If Dr. Cole wishes us to understand that the dental *fabrilla* are nerve fibers; that they are the terminal ends of the sensory nerve, I think he is mistaken. You can easily prove, by microscopical examination, that there is no nerve tissue in the dentine. It would be impossible for nerve tissue to exist in so small a space as is allotted to the dental *fabrilla*, as it depends for sustenance on contact with the blood, which can not enter the dental tubuli.

G. V. Black says we cannot demonstrate the presence of any nerve fibers in the dentine. The irritation and consequent pain in the dentine can be caused chemically or mechanically. Chemically as is evinced by the presence of acids, sweets, and caustics; mechanically by instruments or other materials which tend to produce abrasion. It being an accepted fact that there are no nerve fibers in the dentine, we must now look elsewhere for our medium.

We have it in the *ameba*, which is the primary cell of all organic life—*protoplasm*. This *ameba* exhibits all the various phenomena of life—mobility, prehension, digestion, assimilation, reproduction, and pain, which is the sensation caused by irritation, though it has no organism. Irritate it chemically with hydrochloric acid and it will contract, assuming an elongated or spherical form. If you irritate it mechanically it will endeavor to recede from the irritant. It is also demonstrated that the dental *fabrilla* are not composed of nerve fibers, but that the dental tubuli are filled with *protoplasm*, which is the composition of the *ameba*, and is capable of transmitting pain. We have lining the entire root canal and pulp chamber, a layer of odontoblasts. These are connected with the terminal fibers of the sensory nerve; on the outer side, with the process. These processes are composed of *protoplasm*.

We have the cause: Irritation by instrument or chemicals. We have the medium: *Protoplasm*, the liquid which is the base of life.

The theory which follows is my own, as far as I know. Perhaps you have *all* thought of it. It is on the road to the only way

in which the dentine will ever be obtunded, *i. e.*, the extraction of this protoplasm and substituting for it some resinoid. The protoplasm must be extracted, because it is the means by which sensation is transmitted. The tubuli must be filled with some other substance, because the dentine is anhydrous—that is, capable of again taking up moisture.

You can use whatever means you wish. Dr. H. uses one, Dr. So and So another; I have mine. You treat a cavity that is sensitive, and it will remain less sensitive for a time. If you simply extract the protoplasm, sensibility will return.

I do not wish to say that the result of this method is universal. It will work in nine cases out of ten, probably. There are those here who have been using it for some time; they will tell you of the same result.

To extract the protoplasm, take out the moisture, adjust the rubber-dam, apply some chemical which has great affinity for moisture; you extract the moisture, or protoplasm, by putting in alcohol. That extracted from the dentine, you have taken out the very agent that transmits pain. If you do nothing else, sensation returns soon and rapidly. In place of the protoplasm extracted, I deposit a resinous gum. If you can do it to the apex, you can have it without sensation, to that point; but when you get to the sensory nerves, you have to use an anesthetic to destroy sensation. Oil of cassia is composed of a volatile oil and resinous gum. If you put this in a cavity after extracting the protoplasm, especially if it is diluted with alcohol, it will go to the distance from which you have extracted, and on the application of hot air, it will vitalize in a way you have noticed very frequently, going out with a puff at once. It will leave the resinous gum in the tubuli, and to that distance you can go without pain. After a time you again get a sensation of pain. It may be indifference in patients, or the anatomical structure of the dentine, which causes this method to prove sometimes a failure. If the dental fibriller were straight and continuous from the cavity to the odontoblasts, of which they are the processes, I believe it would be a universal success; and where it works admirably, I believe the tubuli are thus arranged. But in some classes of teeth we find the tubuli in sections, broken and short, running irregularly, much as the grain of some wood near knots. In these we can only extract the contents to a short distance. However, I believe these short tubuli are connected with the odontoblasts by even finer and more thread-like connections, and these short constrictions, as it were of the

tubuli, cut off the obtunding effect. The strongest proof I have that it is not the alcohol or the carbolic acid, or any other one drug which obtunds the sensibility of the dentine, but that it is due to the deposit made in the tubuli when they have been rendered empty, is that you can take any one of the vegetable oils, all of which are to some extent volatile, and will leave a residue, and it will produce the same result; for instance, oil of eucalyptus, sassafras, cajuputh, cassia, or cariphaleum. The oil of cassia seems to work well, due to its being so readily volatilized.

We can hardly turn over the advertising leaves of our dental journals without finding some obtundent displayed for sensitive dentine. If the method I have described would not work, I would be compelled to use a general anesthetic. Should any of you care to use it in your practice, take an ordinary gas apparatus, and in the Buffalo inhaler, such as is used in giving vitalized air, put one dram each of alcohol and ether. To this add four or five drops of nitrate of amyl, carry to mouth piece along with the nitrous oxid gas. Give your patient six or seven inhalations.

Nitrate of amyl has a special action on the fifth pair of nerves, greatly relieving the oppressed sensation of asthmatic attacks; also it is one of the best remedies for immediate and temporary relief in spasmodic attacks of neuralgia, and has the power of dilating the capillaries in the region of the fifth pair of nerves, as is evinced by the flushed face after its exhibitory. However, I do not deem it advisable for any practitioner to exhibit general anesthetics, especially of so complicated a nature, for merely the pain of filling a tooth. The foregoing is the theory. Now I will give the method.

Adjust the rubber-dam. Dry the cavity with hot air, apply hot absolute alcohol, as hot as the patient can bear without causing pain. Let it remain for some time, then again dry with hot air. It is well to use hot alcohol, spray, or vapor. If the cavity does not seem to be dry, apply hot absolute alcohol again. When perfectly dry to the greatest depth possible, which leaves the tubuli without protoplasm (the medium for transmission of pain), I apply a pledget of cotton saturated with the following:

Oil of cassia	3iij.
Carbolic acid	gtt.
Absolute alcohol	3i.
Cocain	gr. iv.
	M.

Again dry thoroughly with hot air. When sensation of pain returns, repeat.

The carbolic acid will coagulate albumen or protoplasm, and itself obtund the sensibility of the dentine, if used in full strength. It would not be possible to use it in full strength near the nerve; but in so dilute a form, it seems to do no harm, and assists the oil of cassia. Cocain is added so that if there is a pulp exposure we would be dealing with the terminal fibers of sensory nerves.

But in the use of anesthetics there is danger of filling too close to the pulp, where there seems to be no signs of an exposure.

The following resolutions introduced at a regular meeting of the St. Paul Dental Society by C. H. Goodrich, President of the Minnesota State Dental Association, and seconded by Dr. L. W. Lyons, President of the State Board of Dental Examiners, were passed by a unanimous vote:

Mr. President, we have with us this evening a gentleman whose scholarly attainments have done as much to advance and elevate the standard of dentistry morally, ethically and scientifically as any man in the profession; and while we are willing to admit that any man, no matter how good may be his intentions, may make mistakes, yet we believe that in the case now pending against Dr. Sudduth the error is on the other side; and

WHEREAS, The Southern Minnesota Dental Association, having received the resignation of Dr. Sudduth, pending investigation by a committee appointed by the President of the Society, did, after thoroughly examining the stenographic report of the evidence produced at the trial in Minneapolis, by the Minnesota Dental Society, against Dr. Sudduth for "gross unprofessional conduct and violation of the code of ethics" and carefully scrutinizing and discussing said report of said trial, fully exonerate Dr. Sudduth of all charges; therefore be it

Resolved, By the St. Paul Dental Society that Dr. W. X. Sudduth be made (with his consent) an honorary member of this Society, and that this memorandum and these resolutions be placed on the records of this Society.

High concentration of steady feeling makes men and women dare everything and do anything.

There is no substitute for thoroughgoing, ardent and sincere earnestness.

ANSWER TO A "PROFESSIONAL."

"Ignorance ever flaunts itself, while true science and skill are always clothed in modest dignity," is an old saying which is especially true in the dental profession.

It is all well enough for a merchant or an auctioneer to proclaim what he has to sell, and publish his prices if he wishes; but a professional man sells his personal skill which people must find out the worth of. Because "professional" puts out his shingle and proclaims he is a dentist, is not proving that he fills teeth as perfectly as Dr. A. or Dr. B., and when he begins to particularize in advertisements what all he can do, most people immediately look on him with suspicion, because it sounds silly and superfluous. If he is a dentist he surely does all that a dentist is expected to do.

Unprofessional advertising keeps away more than it attracts. The medical profession is usually against you, and the good will of the dental profession is worth much to you.

We all have our degrees of skill. There are just as many degrees of skill among dentists as there are individual dentists, and the people will take time to find out where you belong, whether you advertise or not. A broad cast advertisement may bring a little temporary rush if low prices are made an attraction, but it is only temporary and of a very undesirable class.

It is not necessary to put out posters or hand-bills for the people to find out about bridge-work or local anesthetics. If the work is done for some of our patients who need it, that is enough.

A simple announcement or professional card gotten up in a dignified and professional way is all well and good we think, and even necessary to a newly located man; but don't make a fool of yourself by blowing your trumpet and trying to make the dear people believe you are a greater man than ever struck the town before, and that you know more than all the old "moss back" dentists in town put together. In fact, a great man in your own estimation, and all that is needful is for others to find it out.

The dear people will find you out, brother, if you are skilful and honest and a gentleman, and when they do find you out your success is assured if you have these qualifications; no difference how many new dentists come to town or advertise their greatness, your business is sure, if you attend to it aright, and keep up with the profession and remember the old saying, "Ignorance ever flaunts itself, while true science and skill are always clothed in modest dignity."

J. E. Davis, B.S., D.D.S.

USEFUL HINTS.

. Wm. H. Steele, Forest City, Iowa.

TO OBTAIN A CORRECT ARTICULATION.—It is not only essential, but absolutely necessary, that we should have a perfectly natural close of the mouth, and a correct articulation, when constructing an artificial denture; otherwise it will be worse than useless to the wearer. It is almost impossible to get a natural close of the mouth if one depends on a first bite (or any number of bites) and wax rims only. I have followed the method given here for ten years without failure. For illustration: We will take a full upper. Get a perfect impression, make a cast and pattern plate as usual. Try the plate in the mouth and trim till it fits easily to place; remove and put on it a rim of softened wax; have just sufficient to receive the remaining natural lower teeth. Put the plate and wax in the mouth; have the patient throw back the head, swallow, and close the teeth into the wax; remove the bite, pour the teeth, and mount in an articulator; that will allow of the bite being changed in all directions; when the plaster is set open up and remove the wax; now mount the six anterior teeth in the correct positions and try in the mouth; have the patient laugh, talk, and smile, getting the different expressions; if the teeth are not correctly mounted, reset and try till they are right. Now build up with wax on each side where the lower bicuspid will strike, also extending behind the upper cuspids, so the lower cuspids will touch it; build the wax high enough so the lower bicuspid will bed the cusps in when the mouth is closed; smooth the top and put in the mouth. After the plate has been in position a few minutes tell the patient to swallow, at the same time gently close the mouth till the lower ones dent into the wax; remove the plate and put it on the cast. Now close the articulator carefully; if the lower bicuspid and cuspids close exactly into their proper places in the wax there is no need of a change, but if they do not, try the plate in the mouth till *sure* of having corrected the bite; then loosen the set screws of the articulator, adjust the plaster teeth in their proper places in the wax, tighten the screws.

DIRTY OIL-STONES.—Many otherwise clean operating tables contain one of these. Did you ever see a dentist pick up the oil-stone and turn his back to the patient before opening the case? A little piece of cloth, wet in alcohol, and applied with plenty of elbow grease, will keep the stone as clean as new.

ADVERTISING BY THE PROFESSIONS.

While I believe in advertising by the professions, I do not believe in doing it as I would advertise merchandise. It should be done in a clear, direct, and dignified manner; the commonplace, conversational style will hardly do, and the bombshell style certainly will not. But I do not believe in the thin-skinned creed that prevents a respectable and able physician or lawyer from announcing the fact that he is in the profession "for keeps," same as the rest of us are in trade, and that he will serve all who require his services or advice faithfully and to the best of his ability.

There is an unwritten law in most newspaper offices that the latchstring to editorial favor can only be reached through the advertising columns. This confession, for I speak as a newspaper man, is no disparagement to the conduct of American newspapers; nor does it reflect on the fidelity and independence of the editor at all. It simply means that the principle which governs the personal courtesies shown a large depositor by a banker, or a large buyer by a merchant, can be as promptly and effectively recognized by a newspaper towards its best patrons, and without reflecting on its integrity one whit more than in that of banker or merchant.

There is no good reason, as was suggested by a writer in *Printers' Ink* some months ago, why doctors should be made a special exception to this unwritten law. Newspapers, to be consistent, should quit advertising a profession in the editorial column, which not only forbids its members to advertise, but boycotts those of its calling who use the advertising columns. If a gentleman who follows the profession of a physician happens to make a speech, or meets with an accident, why should it be stated that "*Dr.*" So-and-So addressed his fellow-citizens, or was thrown out of his buggy? The same rule could give us a description of "Plumber Smith's new house," or "Grocer Jones' spirited span," or "Shoe-dealer Browne's wife's party." Instead, it is, as it should be, simply Mr. Thos. Smith, Mr. Richard Jones and Mrs. Henry Brown; so, let it be plain Mr. Sorry Sawbones.

J. F. Place, in Printers' Ink.

To prevent leakage of vulcanizers take plaster of Paris, mix it thin and run it around the inside of the cover, and while soft screw it in place, letting it stand a short time before putting it over the heat used. This method is quick and easy to apply.

Dr. E. A. Schillinger.

GLEANINGS FROM THE JOURNALS.

The chief difficulty in obtaining essayists for our societies grows out of the idea which many of its members seem to hold: that they must write something elaborate, scientific, and new, to be acceptable. This is erroneous, in local societies at least; and while it might apply to the National Association, which was the recognized leader of dental thought in this country, we must remember our societies are graded, and the ponderous thought of a society which gathers its members from the whole country would be out of place in one whose membership is confined to a few counties, and is composed largely of young men. The object of our annually meeting together is not simply to listen to papers, but to compare experiences, modestly stating our successes and frankly confessing our failures, getting in keener touch with our fellows, to go home with renewed ambition to make better dentists of ourselves. While dentistry must make its advance to a liberal profession through the channels of original research and scientific knowledge, yet its daily work is full of laborious details, whose difficulties are solved by the ingenious rather than the scientific mind. It often occurs to me, as I suppose it has to others, when reading a dental journal, that I would like to talk its contents over with some one. Moreover, I often see a suggestion that I try, and find it in my hands a success or a failure. When a failure, I do not always know whether the fault lies in me or the method, and would like to hear the experience of some one else. Or some things which I think I will try slip from my mind before the opportunity occurs.

Dr. E. D. Downs, in *Cosmos*.

GENERAL ETHICS vs. LOCAL ETIQUETTE.

George Randorf.

We are under some obligations to Dr. Dean, in July *Cosmos*, for raising a broad discussion on general ethics, to regulate by it the so-called Local Codes of Ethics of the different professions. The subject is indeed ripe for discussion, and it is only by thus preparing the way for the more scientific grounds that the profession may at some future time arrive at sound conclusions. However, it is to be regretted that the author and editor of that able journal have placed themselves on such narrow and confusing grounds. Indeed, the author starts out with the surprising

assumption that he is to *create* the science, or art as he calls it mistakenly, of ethics. He says :

Portions of the territory (*ethical*) they (*scientific moralists*) have mapped ; but the subject, as a whole, they have not presented.

We beg to differ with the esteemed author, and inform him that though Aristotle's attempt to constitute a science of ethics on the basis of observed and observable phenomena of the moral man has been so much premature, that over 2,000 years have passed without any systematic edition to that field ; yet in the eighteenth century the subject has again been taken up. The great Diderot has demonstrated that practical morality depends on our organization, with one sense less, or one sense more, our morality would be different. George Leroy has gone a step further by showing the necessity of utilizing the comparative method in the study of ethics, and with the energy of a great man he pursues the study of the intellectual and moral faculties of some superior animals. Later, Cabanis established the connection between our moral and physical natures, searching for the corporeal seat of some moral affections. It was reserved for the rare genius of Gall to prepare the material for the final constitution of that great science, which, modified and systematized by the still greater genius of Comte, in our own century, now occupies the highest position in the classification of the sciences, *viz.* : Mathematics, astronomy, physics, chemistry, biology, sociology, morality.

The important contributions made by Gall are as follows :

1. The brain is the seat of the intellectual *and moral* functions.

The brain is an apparatus, *i.e.*, not a single organ but an *aggregate of organs*.

3. The brain grows from the back forward and from the sides to the center, which law of growth permits the *approximate localization* of each cerebral function.

Gall also affirmed that affections are innate, and that we can by rational methods improve our nature, exciting the altruistic sentiments and restraining the egotistic ones.

We agree with Dr. Dean that in his book on Ethics, Aristotle has included many subjects foreign to that treatise. It is no wonder to us that Aristotle makes education and religion a part of the function of the state. The explanation will be found in the fact that in the polytheistic *régime* of the epoch preceding the rise of Catholicism, the spiritual and temporal powers have been fused ; but is it a sufficient reason for Dr. Dean to fall in on

analogous confusion now by treating the term Ethics as interchangeable with education, duty, religion, etc.?

Now what is morality or ethics? Dr. Dean boldly declares that "ethics is an art not a science." He says:

It presupposes an end, and it is a presentation of means for the achievement of that end. The end sought by ethics is the welfare of society.

Pray, doctor, does not chemistry aim at the same thing? Is chemistry an art?

The learned editor joins the author in increasing the confusion by the following presentation of the subject of ethics:

The subordination of the individual interest to the common welfare being the natural outgrowth of *biological processes*; a recognition and practical application of the fact was urged as the most promising, and, in fact, only possible means for truly professional progress.

And again:

The doctrine thus stated we believe to be not only sound, but, for the reasons first given, as to its accordance with the principles of *biological* development it seems to be incontrovertible.

The italics are ours, to emphasize our belief that the learned editor is in error when he imagines morality as proceeding directly from biology. To the latter science are reserved the study of man's bodily faculties which resemble those of superior animals. But if we are very near to the best organized animal species, we differ especially by the greater development of the intellectual and moral faculties. The difference is hardly perceptible at the beginning of the evolution, it is accentuated more and more by the *social* development which constitutes the science of sociology.

According to Comte, morality or ethics is the most complicated and important of all sciences. Its dominion is the study of man, especially in his superior faculties, and it leads to the deliberate mortification of human nature. As every other science, *theoretical ethics* has its arts originating in it; thus we find *practical ethics* to include the arts of influencing and modifying our natures—education, in time of growth mostly, and religious culture, extending through life.

Rev. Temple, of England, likens humanity to a big man, always growing, always learning, and Dr. Dean points out the correct view of looking at things, when he says we are all bound in one common organism—humanity—and *must* consult its well-being in all we do or think.

We believe it is just here that the true religious sentiment come in. We are all dependent on one Supreme Being, and for all we receive and learn, must render in services our humble part. But is it not a rather hazardous tumble from the sublime to the ridiculous, when we try to make the "code" a means thereto, and in that high name try to put petty restrictions on respectable members of a community, because in our opinion some worthless or rash ones are breaking some rule of baseless *etiquette*?

It seems easy for some dental writers to judge from some kind of general ethics, to what they are accustomed to call local ethics or a code of ethics, or class ethics, as if that was something analogous to general and local anesthetics. We venture to suggest that both doctors and dentists have not studied sufficiently the general objects of ethics, hence the confusion.

The modern science of ethics teaches that surroundings (taking this word in the widest sense as used, for instance, by Fiske), education and religious culture, determine and mould the character of every member of society. Thus, even while a man may contrive to avoid punishment for flagrant violations of some code of ethics (sic), he may be a scoundrel, a cheat, a hypocrite, in his private dealings, still he may continue an honored member of some profession.

It is clear that dental, or any other code, wrongly assumes the rôle of improvers of the *moral tone* of those who sign them. It is true some provisions may act as a deterrent from open violations of certain stipulated etiquette, on the other hand serving an inducement for the shrewder ones to profit by an explicit or implicit obedience to the *letter* of the rules, so that it seems rather absurd to ascribe to them a sancity or educational power for which there is no warrant in either the science or practice of ethics. Furthermore, for these very reasons of wrong assumption, the "codes" may often be made instruments of tyrannical oppression, by introducing the absurd and dangerous majority rule in questions of moral conduct.

What dentists are after in practical professional life is the advantages of meeting each other in societies or otherwise, for the purposes of interchanging views, the advancement of science, the mutual benefit and protection of members, and the general welfare of humanity. What they will have to do, in the future, is the creation of a sound and sensible public opinion, which would be able to dispense with formal policemen in the moral dominion where man holds intercourse with man, within the bonds of "common law."

We believe Dr. Dean in error when he advocates more explicit laws for keeping our moral conduct right. It seems to us that we suffer rather from the *abundance* of obsolete, false laws. The three cases cited by him we can readily use as witnesses against his testimony. Aristides the Just, suffered not from *lack* of law, but was banished *regularly*, in accordance with the *common law* prevailing at that time, which provided *that any person becoming too popular shall be banished as a means of protection*. The chemist, Lavoisier, talked politics, and got guillotined on the ground of technically offending against the law provided for those attempting to overthrow the existing "government." The half-idiotic Robespierre, was a horrible example of what the confusion of spiritual and temporal powers may lead to. As to Galileo, why it is plain that he offended against the ecclesiastical "code of ethics" prevailing at that time. Did he not preach against the *belief* of the majority?

No law will stand long unless it is in accordance with the laws of nature, as revealed by science, and what shall we say of those doctors who are hurling their vicious shafts of disapprobation at their victims from behind the "impregnable" bulwarks of self-constituted *local codes of ethics*? They do not bother themselves with the general tenets of the science of human nature, and the modes of influencing its improvement, as laid down in the science of ethics. As well might a union of Italian organ grinders unanimously *resolve* to expel a member of their union, who, having heard a *performance* of Wagner's *composition*, has dared to publicly express (in newspaper) the opinion that he (Wagner) was "not in it," and that he (member) could "beat that fellow any time," *if* the public would only come to hear him play *his own* ("hear, hear,") composition.

No wonder that lovers of fair play, and gentlemen who care for the reputation of their professions more than the passing approbrium of over-conservative diletants, smarting under the existing confusion, have raised their voices against the wrongs which, in our opinion, can only be remedied by an appeal to science and fairness.

Says Dr. Ottolengui :

We claim that our societies are scientific bodies in search of knowledge, and then we throw up a barrier, not of attainment, but of conduct. * * * Of course I would not argue for the admission of the rascally, or the ungentelemanly, but I only wish to point out that we have erected an erroneous standard of membership. It is one that is not in use among scientists in other branches of knowledge. * * * Are we so much less civilized?

Dr. S. Oakley Vanderfivel writes thus against the medical code of ethics :

The necessity for a code of ethics implies, first, that the social status of the profession is such that an effort must be made to formulate in language what constitutes a "gentleman." * * * Such a status, if not acquired by antecedents or education, can no more be formulated in language and applied to the novice, etc. * * * Secondly, the necessity for a code implies that independence of thought and action cannot be tolerated ; that no member of the profession * * * shall exercise the right to act as his judgment dictates ; but he must sink his individuality and submit to the impersonal dictates of a Trade's Union, which absorbs both the personality and the conscience.

Dr. Lewis S. Pilcher says of the medical code :

It tends to make every man a spy on his neighbor, and has made persecutions of the most petty nature possible. * * * It has created a multitude of star-chambers all over the land, in which men have assumed to sit in judgment on and to exercise discipline over their peers as to motives and methods of professional conduct.

Our own brilliant Dr. Louis Ottofy, of the *Dental Tribune*, gives away the sham in the following unmistakable language :

We sat sometimes as judge and at other times as spectator, on these occasions, and we cannot recall an instance when the trial, so-called, was anything but a farce, or where it has led to any other result than ill-feeling, hatred, and unpleasantness generally. Not only that ; we know of several instances where the trials were the result of jealousy, where they originated in unjust accusations and led to unfair convictions. We know men of prominence who have admitted that much.

And he concludes thoughtfully and significantly :

We reiterate that one of two things should be done : Either define the code on this point with absolute minuteness, and compel societies and every member to live up to it, or else do what we say would be the most proper thing—"take down the bars."

Our amiable neighbor, the *International*, thus states the difficulty, allowing the *circumstances* to run away with the conclusion :

Where is the line to be drawn between that which borders on the self-laudatory and egotistical, and that recognized as proper and purely for the information of those directly interested? *Circumstances must control the decision.*

Does our esteemed contemporary admit, then, that all sorts of men may sit in judgment over the private character of a fellow-man, and decide by a majority of one or one hundred—as *circumstances* may be—that he is morally wrong ?

Out, out of darkness into the light. Let us have more light on this code of business of ethical codes.

ITEMS.

I think cross-pins are a great convenience in lower teeth. I hope the manufacturers will continue to improve on them.

F. G. Corey.

* * *

Dr. Tomazoli, a noted Russian physician, is about to make public what he claims to be a positive cure for leprosy. The chief ingredient in the remedy is a whey obtained from sheep.

* * *

A SOLDER FOR ALUMINUM.—The soldering of two pieces of aluminum has heretofore been considered impracticable, but recent experiments show that it can be easily done by the use of chlorid of silver as a fuse. The pieces of metal are placed together, and a finely-powdered fused silver chlorid is spread over the juncture. The solder is then melted by a blow-pipe.

* * *

THE LITTLE INNOCENT.—Gertie's parents have staying with them on a visit an aunt whose charms are chiefly of an artificial character. The little girl would like to sleep with her and her wish is gratified. Next morning Gertie comes running to her mamma in the greatest alarm. "Oh, mamma, I think I'd rather sleep again with you, for, do you know, auntie takes to pieces."

Kolner Sonntags-Anzeiger.

* * *

TO MAKE CROWN DIES.—As you meet with a patient, or one possessing a complete set of natural teeth, of medium size and normal development, beg the privilege of an impression of both jaws in modeling compound. Make a plaster cast of each, and trim so that duplicates can be made in zinc or hard brass counters in lead or tinner's solder. From these dies gold caps can be swaged, anatomically correct for every tooth. Two or three of these cheap dies will meet almost every requirement.

Dr. W. S. Elliott, Sag Harbor, N. Y.

DR. ANGLE COMPLIMENTED.—Sir Christopher Heath, the most renowned surgeon of England, if not of the world, writes the following letter to Dr. E. H. Angle, of Minneapolis, Minn.

“36 CAVENDISH SQUARE, LONDON.

“DEAR SIR:—I am preparing a new edition of my work on Injuries and Diseases of the Jaws, and I shall be greatly obliged if you can lend me the blocks or electrotypes illustrating your method of treating fractured jaws (*New York Medical Record*, May, 1890).

“Yours faithfully,

“Chris. Heath, F.R.C.S.”

* * *

DR. JOHN COLBORNE GRASSE, died at Seattle, Washington, June 10th, 1893. Dr. Grasse was born in Kingston, Ontario, December 3rd, 1853. After completing his studies at Queens College, Ontario, he began the study of dentistry. In 1869 he moved to Nevada to practice his chosen profession. Later, in 1871, he moved to Seattle, where he enjoyed a lucrative practice till the time of his death. He was the first President of the Washington Territorial Dental Society and the oldest practicing dentist in the State. He was progressive in his profession, and a kind and indulgent husband and father. In 1877 he was married to Miss Eva L. Hansbron, who, with a daughter of seven years, survive him.

P. A. Purdy, D.D.S., Geo. W. Beagdon, M. R. Henderson, Committee.

* * *

Wherever you find pus, or even where you find effusions from the blood, going on undisturbed any considerable length of time resulting in pus, where there are any uneven or irregular surfaces bathed in that pus, a calcic deposit forms a crust—what in pyorrhea we call serumal calculus—toward the apex of the root. Dr. W. C. Councilman, the best authority perhaps in the United States on this subject, says that any territory which is bathed in these effusions, and which is bathed in pus, if there are proper pockets of unevenness in the territory, especially if there is a hard surface where the accumulation might begin, these crusts are likely to be deposited by the precipitation of this matter, which is found in all pus. We find it so in catarrh. In bad cases of nasal catarrh these crusts are formed. We find it so in different parts of the body, especially around the bone where the parts have been bathed in pus.

Dr. I. D. Patterson.

INTERNATIONAL REVIEW.

By George Randorf.

POTASSIUM AND SODIUM FOR INFECTED TEETH.

I.

Dr. Schreier brought forward a new remedy for the sterilization of infected teeth, which was successfully employed by Dr. E. Schiffmann, who reported the results in *Revue Intern. d'Odon-tologie*.

Thirty teeth with gangrenous pulps were treated in four months with *kalium natrium* (a combination of potassium and sodium), and filled always in one session. In some of the cases periostitis occurred.

A young student had a communicating abscess, occasioned by the second upper right bicuspid. The usual methods having failed, Dr. Schreier's remedy was tried, and the tooth closed with gutta-percha. After eight days the fistula healed, and all pain disappeared.

II.

The same remedy has also attracted the attention of Dr. Julius Scheff, Jr., of Vienna, who gives his experience in the *O.-U. Viertel. für Zahn.*

A feature of the new method is conservative treatment, so that instead of the usual mechanical removal of the ruined matter, it is subjected to a chemical process and transformed into an aseptic substance, which is the basis for immediate treatment.

Where circumstances permit, the tooth to be treated must be covered with coffer-dam, but where it cannot be attached, the adjoining mucous membranes must be protected by cotton rolls or napkins. The preparation must then be carefully taken from a vial with a barbed nerve needle—only enough to form a white covering for the needle, and introduced into the root canal. If the quantity proves insufficient, the process is repeated till the mass attaching to the needle smells of gangrene. The operation is considered at an end when, instead of the latter smell, that of potash soap appears. Then a carbolic or engenhoic thread is introduced till the following day, to discover, on the removal, whether the smell of gangrene is still perceptible. In the first case, potassium and sodium is again introduced, but in the second, the usual root

canal filling is proceeded with, and the rest of the cavity closed with gutta-percha.

Of thirty-nine cases treated with this preparation, peritonitis set in in ten; however, the doctor is of opinion that the small percentage of failures ought not to discourage dentists from employing the potassium preparation, and give to the world the results of their experiments.

THE "TEN COMMANDMENTS" OF THE DENTIST.

The Board of Health of the city of cholera fame, Hamburg, Germany, having requested the editor of *Zahnärztl. Wochenblatt* to draft, in the form of the Ten Commandments, general rules for the care of the teeth, the following was the result:

I.

Thou shalt accustom thy child early to the use of its teeth, by offering besides liquid and soft, also solid and even hard food.

II.

Thou shalt accustom thy child, as soon as it has teeth, to clean them, mornings and evenings, with a soft brush and fresh water.

III.

Thou shalt clean thine own teeth, mornings and evenings, with not too hard brush and fresh water. By this thou shalt refresh and harden thy mouth and throat through gargling.

IV.

Thou shalt submit the teeth of thy children, as well as thy own, to an examination by a dentist, at least once a year, having the diseased parts attended to (filled) at once, and thou shalt also carry out conscientiously all other prescriptions of the dentist.

V.

Thou shalt, in case the teeth of thy children assume an irregular position, consult a dentist *as early as possible*.

VI.

Thou shalt seek the aid of a dentist *at once* if cold victuals or drinks produce a drawing pain in a tooth.

VII.

Thou shalt *never* have a tooth extracted, which is in normal position and in not too crowded row of teeth, even if it occasion severe pain or appear loose and elongated; thou shalt moreover have such teeth treated and filled by a dentist.

VIII.

Thou shalt promptly apply for the extraction of such teeth which are too loose and no longer preservable, either on account of neglect or old age, because they only breed infection for the remaining sound ones, as well as hindering their use.

IX.

Thou shalt decide to wear *artificial teeth* only when thy own are no longer serviceable for the mastication of food, or when there are disfiguring gaps in the teeth arches. Vanity shall *never* induce thee to break off or extract teeth, and substitute artificial ones for them. An often filled tooth is still better than an artificial one.

X.

Be courageous in tooth operations, and beware of the much-praised anesthetics. The use of the latter is only justified when a painful and prolonged operation is to be expected.

WARNING.

Beware of the use of *expensive* and useless—if not harmful—remedies for toothache, or easy fillings, tooth pastes, tooth washes and similar advertised articles. They are not useful for thee, but only for the vender.

FILLING ROOT CANALS WITH COAL WADDING.

Dr. E. Förberg, of Sweden, observes in the *Odontologisk Tidskrift* that after experimenting with all other material, he has found that for filling roots coal wadding serves best the manifold purposes of an antiseptic filling. The coal used seemed to be a modification between diamond and graphite.

Like the first it is a non-conductor of electricity, and an extremely bad conductor of heat. With the graphite it has in common the quality of slow burning. Like the charcoal it possesses, in high degree, the quality of absorbing gaseous substances, and even exceeds the former on account of its greater porosity. This porous, soft, and flexible coal, is in itself a disinfectant, but is reduced to a still more perfect antiseptic, in its manufacture, by the addition of pure boric acid which pervades the small fibers.

For deciduous root canals coal wadding is the most suitable filling material; it does not prevent the resorption of the roots. It is used in treating the pulp, tamponing extraction wounds, in prolonged operations, such as pulpitis, periodontitis, pyorrhea alveolaris, etc.

OUR MONTHLY GOSSIP.

By W. E. Blakeney, D.D.S.

THE PLANT of happiness cannot thrive without the air of cheerfulness.

IT IS said that strong coffee is an antedote for cocain-poisoning.

DR. F. O. JACOBS, in the *Cosmos*, combats Dr. Miller's theory of dental caries.

PROFESSOR CHEEVER says that the best styptic, from its non-irritating properties, is ferric alum.

A FULL grown man exhales seventeen ounces of carbolic acid every twenty-four hours.

"IT REQUIRES but little force," says Dr. Barrett, "to move any tooth if it is intelligently applied."

A SMALL ROPE of absorbent cotton saturated in gutta-percha is said to make a good temporary filling.

CEMENT FILLINGS, after setting, are improved by rubbing the burnisher over white wax, and then burnishing the filling.

THE DENTIST who possesses skill, culture, and dignity requires no code of ethics to keep him within the limits of professional decorum.

AND NOW it appears that nitrate of silver was used in dental practice forty years ago. A pretty old infant, ain't it?

ATTRACTIVE office surroundings are desirable, but when show and glitter are made the excuse for exorbitant charges, the patient looks on them disparagingly.

FOR BITES of insects attended with itching, the best remedy is menthol in alcohol—one dram to an ounce.

ALL ORGANIZED dentistry in Great Britain is constructed on the independent basis, there being no official alliance with medicine. This is as it should be.

"THE DENTIST who graduates at any good school," says Dr. Barrett, "is without doubt, quite as competent to give anesthetics as is the average medical graduate."

THE STRUCTURES of the teeth and the cash in hand of those owning them, must determine the kind of filling materials to use for their preservation.

THE DENTIST who succeeds most in intricate operations is guided as much by his own judgment, as by the methods and formulas found in the text-books.

IT IS said that the Prussian government prosecutes the vending of nostrums and quackery with inexorable severity. Fraud of this kind is allowed full swing in this country.

I WOULD not give a rush for a man who is afraid to express his opinion on subjects coming under his observation, regardless of the opinion of others.

A NEW and "improved" method of filling the "roots of teeth" consists in melting a piece of hard wax into the roots by means of an electrode." Nothing more killing than electrocution.

TIN FOIL, it is said, preserves inherent qualities which make it the ideal filling for a certain class of cavities. One reason why it has fallen into disuse is because plastic fillings are less trouble to manipulate.

THE PREPARATION of the cavity for a gold filling depends altogether on the condition of the tooth. There can be no set rule as to pits or undercuts—the case in hand suggests the proper course to pursue.

DR. V. A. LATHAM is of opinion that "the diploma should contain an agreement, that advertising or other grossly unprofessional conduct would work a revocation of the diploma." Unprofessional disputes would follow the adoption of such a meaningless agreement.

"IF THE microbe theory of Dr. Miller be true, why," asks Dr. Gerhart, "should not caries develop along the dentinal walls of leakage, as well as along or between the enameled walls of a sulcus?" Will some one qualified to speak, answer this pertinent question?

DR. A. M. BENSON is reported to have said that "it would be better for humanity if all the instruments invented for the extraction of teeth were sunk in the sea." Better use soap and fresh water for the cleansing proposed, doctor, salt water might rust 'em, you know.

"THE BEST men in the profession," says Dr. Benson, "are agreed that ninety-nine out of a hundred of all the teeth and roots presented for extraction can be saved and made comparatively useful." Well, all right, now let this doctrine take root and grow. The soil is not of much account.

TO DRY a root canal ready for filling it is proposed to use a strong battery with an electrode "brought to a bright red or white heat." The hissing sound which will be heard when this instrument of torture is doing its work, may afford more melody to the ear of the operator than pleasure to the patient.

MUCH is being said nowadays condemnatory of the "money aim in dentistry," as if it were non-professional or wicked to practice for the sake of the money there is in it. Talk of this kind comes from those who charge the biggest fees for their services.

TAKE A quart-taper cork, trim up in cone shape on the lathe, make a slit through apical end of cone half way down with a dental saw, insert in this a piece of sandpaper a little wider than the opening, bent back at one end for retention, and you have, says Dr. Barnes, in the *Dominion Dental Journal*, a hand sandpaper mandrel for use on rubber plates, which conforms with depressions and works admirably.

DR. CHARLES HARKER has no confidence in pulp capping when the exposure results from caries, but, on the contrary, says pulps will frequently die when capped under the most favorable circumstances; and he is further of the opinion that "a tooth pulp, instead of being easily manageable, is so treacherous that we can never predict with certainty the result of capping."

DR. W. B. NEAL believes "when a man is fully occupied in such work as the preservation of the natural teeth, there are few who do not feel and show the effect of the strain on their nervous system." While I sincerely sympathize with those who have to endure so much mental agony in their "work," I cannot help dropping an occasional tear for the victims on whom it is performed. They, too, suffered from the effects of "the strain on their nervous system" while undergoing the "preservation" manipulations.

IN SPEAKING of the condition we call pyorrhea, about which so many conflicting opinions prevail, Dr. Barrett says: "Those who do essay its cure are at work in the dark, and the remedies used are empirical, while most dentists do not attempt any radical remedial measures, but assure the patients that the disease is incurable. They stand idly by and philosophically witness the destruction of the organs which it is their accepted duty to save."

OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

Question 117. *A child ten months old, fell, striking the left upper central on a stove. Examination proved the tooth not broken, but driven back into the jaw such a distance that the cutting edge was only a line above the gum. Should the tooth be extracted? Will it prevent the eruption of the permanent tooth, and will the temporary incisor again erupt if not removed?*

Never had a case like this, but would certainly let it alone, and think the tooth will re-erupt. The root of a broken tooth will come to the surface nine times out of ten, and why not this?

W. A. Moore, Benicia, Cal.

I would not extract the tooth. The eruption of permanent incisor will probably not be prevented, although it is possible. As the temporary incisor is about two-thirds formed at ten months of age, it is hardly possible that it will erupt again.

Henry Pirtle, D.D.S. Louisville, Ky.

Should extract rather than hazard the formation of an abscess. If the pulp is destroyed, which is more than probable, it will interfere with the eruption of permanent incisor owing to non-absorption of a devitalized root. If the pulp was not injured think it will.

Fred. M. Wetherbee, Milford, N. H.

A deformity, whether natural or mechanical, should be remedied as far as possible. The child's incisor driven up into the spongy os should be pulled down to place soon after the accident; then if union is impossible, remove tooth. The permanent incisor will come out if the germ remains uninjured.

U. Smith, Stockton, Cal.

The child, being only ten months old, could not have had a fully erupted incisor. Hence a force at that time against the tooth sufficient to drive it any distance would necessarily break up all periostial union, and would warrant us in the belief that it would destroy all vitality. As to its normal eruption, I would in the absence of any threatening pain, await results, and at the first appearance of trouble, extract. Don't think the loss of the desiduous tooth at that age would necessarily prevent the eruption of the permanent tooth. It may retard it (and cause an "impacted tooth").

It calls to mind a case I learned the history of once in my early practice. A professor called to consult me as to an enlargement or thickening of the process, just to the right of the floor of the antrum, where there was absent the second bicuspid superior. On examination (after his relating the cause of the loss of the superior temporary molar, which was lost by a fall and knocked completely out, at the age of five years), I found the second bicuspid superior laying lengthwise in the arch with the buccal cusp, partially erupted, an "impacted tooth."

J. H. Grant, Palestine, Texas.

Question 118. *A girl of fifteen years, with both lower first molars gone, is unable to close her mouth on account of second molars being so prominent that the front teeth lack one-eighth of an inch of coming together. What is best treatment?*

If front teeth are good I would extract the molars. *W. A. Moore.*

The molars should be ground off, little by little, every two months. If by chance the surfaces are left sensitive, cauterize with actual cautery.

U. Smith.

If the twelfth year molars only interfere to the eighth of an inch of normal occlusion I should cut them down, crown, and bridge in the sixth year molar, regulating the setting of crown to conform to the proper articulation.

J. H. Grant.

I would wait till patient is at least sixteen years of age, and then, if front teeth do not occlude properly, cut off the molars, fill the roots and crown with gold the proper length to overcome the deformity.

Henry Pirtle, D.D.S.

Question 119. *A young lady has very prominent upper centrals, which extend down about one-sixteenth of an inch below the laterals. Is it advisable to grind them off, so as to improve her appearance? Teeth are otherwise in good condition.*

Yes. Remove a little every two months till of proper length.

U. Smith.

If the lower centrals touch the upper, grind. I think this will remedy the trouble, but if teeth do not touch, grinding will not help matters.

W. A. Moore.

Yes, I think it best to grind them down, if by so doing it would not cause them to become sensitive; otherwise, I would extract and adjust a bridge.

J. H. Grant.

If the laterals are the proper length, would grind off the centrals. If the laterals are shorter than normal, would apply some kind of regulating device to draw them down to the proper length. *Henry Pirtle, D.D.S.*

If teeth are in a normal condition otherwise, it would do to grind them. A better way would be to push them back into the jaw. Have had as good results moving teeth this way as in drawing down or moving laterally, and have never killed a pulp.

Fred. M. Wetherbee.

Question 120. *Is it wrong for a dentist to work on Sabbath morn? What say ye, wise men?*

Don't work on Sabbath morn unless you *can* and *will* take another day for rest.

Fred. M. Wetherbee.

Work when you please and do good work—the results will always be the same.

U. Smith.

I think it entirely wrong for a dentist to work on the Sabbath unless it is to relieve suffering. "Six days shalt thou labor and do all thy work."

Henry Pirtle, D.D.S.

I regard it wrong to make engagements to do work for a pecuniary benefit on the Sabbath. Of course there are circumstances that will justify a family dentist to do work, but it should be only when absolutely necessary.

J. H. Grant.

[There are cases where it is necessary to relieve pain on Sunday. There are cases—but these are few and far between—where a man's business is such that his presence is required from morning till night, and to neglect his duty, for dental operations on week days, might bring a discharge from his employer and thus become a serious matter to his family. In cases of this kind (we have met but two in a long practice) it is not wrong to work on Sunday. But there is another point aside from that of right and wrong. Nature demands a rest at stated intervals to carry on her wonderful work of repair and recuperation. The seasons force a rest on the vegetable kingdom; the cold of winter forces the bear and other animals into their dens for their long winter rest, and the Creator has set aside one day out of seven, for those created in His image, as a day of rest. The man that works at one thing without rest or some decided change at certain intervals, becomes a machine, is cranky, and soon finds he has more nerves than sense. Make Sunday a day of rest, of change, or recreation. Go to church, go out into the country, get among people and talk of something outside of your line of general business; expand your mind and ideas and don't become cramped or play bad egg the rest of your life, and contaminate a nest of good ones that might hatch into something of value to the rest of mankind, if of no use to yourself.—ED. QUERY BOX.]

THREE TEMPERANCE BEVERAGES.

Stokos. Put from four to six ounces of fresh oatmeal, ground as fine as flour, into a pan, mix with a little cold water to the substance of cream, then add five or six ounces of loaf sugar and a fresh lemon cut in slices, with the pips taken out; add a gallon of boiling water. Stir thoroughly while the water is being poured on. Use hot, warm or cold. The lemon may be omitted or any other flavoring used instead.

Cokos. Put four ounces of fresh fine ground oatmeal, four ounces of cocoa, into a pan, mix with a little cold water into a thin batter, then add six ounces of sugar, pour on a gallon of boiling water (stir while water is being added).

Hopkos. Boil one-half ounce of hops and one-half ounce of ginger (bruised) in one and one-half gallons of water for twenty-five minutes; add one pound of best brown sugar, and boil ten minutes more; then strain and bottle, or put into a cask while hot; it will be ready for drinking when cold. It should be kept in a cold place. Dried horehound may be used instead of hops.

EDITORIAL.

KNOWLEDGE vs. EDUCATION.

Too much of what passes for education is only the memorizing of facts. This gives knowledge, but the education that gives wisdom and skill and the enlargement of our powers comes of deep thoughtfulness, thorough investigation, and severe discipline. Mere knowledge may be mere rubbish, crowding the mind, stifling the heart, and weighing down the spirits; but the culture of a thorough education selects the true from the false, the important from the unimportant, the relevant from the irrelevant, and supplies these to life's greatest advantage. Thousands come from our colleges on the stilts of knowledge to find themselves ill adapted for the essential every-day demands and necessities of society; others have been to Mar's Hill where they reason of things, and become fitted by skill and culture for the great responsibilities of business and for leadership in the vast fields of thought and progress.

There are foundation principles, essential facts, scientific data and theories which must be placed orderly, carefully, and discretely in the memory. This is knowledge, but it is left for the education of all the faculties to give us the ability to manage these facts in the kaleidoscope of life, so as to be continually producing the most beautiful things of wisdom, taste, art and science, ever new and useful. This is the test of our education.

All the erudition of our books and of our teachers should be studied thoroughly, but with discretion and thoughtfulness. They must not be devoured indiscriminately, nor digested and assimilated without the selection of the fittest. There is food everywhere, and in everything, and of all kinds, rich food to be had for the gathering, and there is chaff. But what is food for some may be poisoning for us; and what is not poison might make a good baboon, but we want to make a man.

Theories are woven facts, and yet the relation in which we weave facts, may make them fancies, and even follies. To weave the beautiful garment of life, facts must be wrought in harmonious

proportions and relations, or the best spun fabric will be spoiled. Therefore, in gathering our materials, every fiber must be tested for our special use, and our skill in workmanship must show an entirety that gives usefulness, strength, and perfection.

We read and talk and collect too much; we study and reflect and digest too little. It is the comparatively few facts most adapted to our purpose, and mastered and reduced to practice, that do us the most good. And this clear thinking and skilful practicing, sound judging and deep reasoning, quick perception and precise discrimination, must come from severe culture. Mere knowledge does not produce it. It is the expansion and refinement and maturity of all our faculties that give us shrewdness and tact and felicitous aptness, making golden opportunities and the ability to seize them and to convert them into a living force.

Mere knowledge may make us useful to others, as a cyclopaedia or as a pack-horse, but education is knowledge wrought into power—a power applied to the progress of the world.

Oxyphosphate for a permanent filling sounds strange; but it is becoming quite common. In large cavities, and in hypersensitive teeth, it is undoubtedly the best filling known. Of course, its surface must be protected with gold or alloy. If this is done there is no disintegration, and it hardens the dentine, protects the nerve, and gradually reduces sensitiveness. It does not contract or expand; and as, if used soft, it sticks tenaciously to the walls, it is more impervious to moisture than any metal can be, and therefore permanent, and more strengthening to weak walls. It needs a little skill to place the metal while the cement is soft; but after some practice, small pieces of either metal are easily pressed softly on its surface, and left to project from the cement, as an anchorage for subsequent pieces. In a few minutes, more can be added and gradually condensed, working from the edges toward the center, without disturbing the cement. Any gold can be used; but, perhaps, the cylinders or the crystal gold is the best, or a gold plate made to fit the surface can be used by having an anchorage fastened on the under surface.

SEVERE MALLETING.

Severe malleting in filling a tooth should be avoided.

1st. The most thorough condensation of a filling should be next the wall; but heavy blows from the mallet tend to curl the gold up, and thus cause the gold to leave the wall.

2nd. Heavy malleting often produces a loose rolling filling by balling the gold. Many more gold fillings than we suspect, whether filled by pressure or by blows, have this fault, causing the filling to leak, thus laying the foundation for future decay. A filling should be tested during its manipulation. The slightest rocking should condemn it; for it cannot be remedied. The only way is to remove it at once and begin again.

3rd. Heavy blows often check the enamel. It may be so slight it cannot be seen at first. But the check is soon to become a crack, and the crack a break.

4th. Severe malleting sometimes produces such over condensation as to burst the wall. In our zeal for a very hard filling, we have more than once seen a piece of enamel thrown off by this means, just as we were congratulating ourselves that we were doing a good job. Such a check will not show itself till we are polishing our nice filling, and then, perhaps, it is so slight we persuade ourselves it will never amount to much. But it will be sure to increase, and perhaps destroy both tooth and filling.

A dentist of prominence showed us a front tooth a third broken down. It had been twice filled by the use of the mallet.

"I can hardly discern the fault," said he; "for it was very thoroughly filled both times. The pounding fairly loosened the tooth."

"Perhaps too thoroughly filled," we suggested. "It is not always the hardest filling that is the best."

"Well," said he, "I must have a hard filling to satisfy me; and yet both of these fillings came out as whole and as hard as bullets."

"That tooth would be a fine test for the skill of the celebrated Dr. A.," said a third dentist.

He resorted to this popular dentist, noted for using heavy blows from a heavy mallet; and the tooth was again filled beautifully. He showed it to us with pride; but we thought we discovered a slight check on the enamel.

"Well," we said, "that will not roll out as you said one of the others did. It is undoubtedly filled very thoroughly. But I am afraid of it, nevertheless."

In a short time the slight check we saw showed more clearly, and at the next State convention—hardly a year—a large piece of enamel was broken away. The filling was in the waste drawer.

Who, when a child did not play with blocks? And who, as he stood them up in a row, did not like to see them knock each other down? It was only to topple over the first, and over they all went in such quick succession that it was real fun.

Some of us are playing at the same game now, though the blocks are larger and the play is more expensive, and there is no fun in it. The individual who does not pay for his goods, knocks down the first block. He would not really embarrass any one for the world. It is only a few dollars, and if he had thought a little delay would have resulted in anything serious, he would have paid long ago. But each of his playmates owed a few dollars too. The whole sum did it; for his dealer is obliged to write to his wholesaler: "I hope you will be kind enough to send me the following, though I am not able to remit even for my last goods. And, by the by, you will have to renew that note of mine. My customers are very slow of late." It was only a few hundred dollars, how could that embarrass a great wholesale dealer? But many retailers were writing in a similar manner, just as though he was made of money. He has finally to write similarly to his manufacturer, and the manufacturer to the banker, and the banker to the U. S. Treasurer, and the Treasurer to the President, and the President to Congressmen, and Congressmen assemble to talk it over. Are these to be knocked down, too, or are they to solve the problem?

Boys, we may have to come back to you to put up the blocks again. Prop up your dealer with your dollars. As you straighten him up, he will pass on the dollars to straighten up the wholesaler. The dollars, augmenting as they go, will soon have the whole row standing again. Then won't we all have fun? Though not at the game of knocking down.

We hear much of the hard work of dental practice. But what are its hardships in comparison with many other occupations? When we were a clerk in a dry goods' store we were on our feet from 7 A. M. till 10 P. M., with only a half hour for each meal. When we went afterward to learn cabinet making we worked thirteen hours a day; and when we became a physician we considered ourself lucky if we had one whole evening with our family, and three unbroken nights a week. Often our "hours of work" were twenty-four—night and day, rain or shine, cold or hot, and, we might say, sick or well. When we entered dentistry it was to get relief from these irregularities and overwork and over nervous strain, and we found it. It was a luxury to have stated time for eating and sleeping, and to be home undisturbed. When busy our reward was ample, and when at leisure time for study and rest was a luxury. Even if we came from our office specially wearied, a half hour at the wood-pile or with the hoe in the garden, gave wonderful relief, and our evening meal was eaten with a relish.

We can make hard work of anything, even dentistry. But in this, especially, we can so divide and occupy our time, and so enjoy it, that, though we are thoroughly busy, we take pleasure in everything.

It is with great regret that we are compelled to lay over for a month Drs. Rehfuss and Brinkmann's article, "Oral Diseases, Surgical and Non-Surgical," due to the removal of our lithographers and consequent delay in getting the plates. The October issue will contain the articles and plates for the two months.

OUR ENGLISH BRETHREN.

Some of our esteemed contemporaries take umbrage at the snub our English dental dignitaries have given the American dental profession in refusing to send delegates to our Dental Auxiliary of the World's Exposition. But to us the conduct of these dental noblemen of England is not strange. The idea of our expecting the learned aristocratic dental profession of England to associate with us! The idea of we mere blacksmiths and barber tooth pullers expecting "the teachers of nations" to recognize us as equals! The idea of we mere country lads inviting representatives of the great and learned dental fraternity of England to come out into the woods of the Western wilds to a little show we are having! Of course, they disdain such familiarity.

Their first snub ought to have been sufficient; for it is not a year since the same blue bloods of the dental profession of England reminded us that their dental colleges were a great deal better than ours (beg pardon, they have not one dental college in all England; the very best they can do is to boast of a little college in one of the villages of Canada. They have not even a dental hospital, independent of the M.Ds., or even a school room). Well, I suppose we must admit that their course of dental education is superior to ours. They distinctly say this. (They have no course of dental education, no professors to dictate a course, no dental faculty, not under the surveillance of the medical profession.) Well, well; they, the dental profession of England, certainly allow none to enter their ranks with so little professional knowledge as we do. (There is no distinct dental profession of England.) They are only a few men who are allowed by the doctors to pull teeth, or to "stuff" them, or make mechanical substitutes for them, if they will show proper deference to the great M.Ds. They are not allowed to dictate what the qualifications of their own students shall be. It is dictated to them by their superiors—the men of pills. Well, really, what shall we say then? They must have some superiority over us, for they are Englishmen. No, they have none. They are not allowed even to have Dental Boards of Examination

without an M.D. on it. They are obliged to take off their hat, and bowing with humble subserviency, say to the commonest doctor of England: "By your grace, sir, we live and move and have our being." These are the men who know too well our superior skill to allow us to practice on their little island.

O, no; this is only a little Yankee boasting. We like these English dentists. They are jolly, genial, generous gentlemen. And when they come among us they prove themselves to be intelligent and efficient practitioners. If they had come to our Fair we would have showed them royal hospitality. But they could hardly excuse the boastful spirit of our invitation. They are learning even to have dental colleges like ours now.

The fault of many a bad filling is in the frailty of some part of its wall. By pressure of the plugger, or by blows from the mallet in filling, or by after service, a check may be made in the enamel. It may not show till discolored; but it is almost sure to increase and loosen the filling, or make a break that cannot be successfully repaired. The tooth which is frail, either from thin or brittle walls, should be nearly filled with oxyphosphate, and finished with gold or alloy. But even if it is to be thus filled, it is better to break down such parts of the wall liable to become afterward defective. And yet, though we should be thus cautious not to leave such faulty walls, we should be equally careful not to cut away strong enamel that would be a protection to the filling, and prevent the unnecessary display of gold.

Dr. L. P. Haskell writes that the article we published on page 478, August ITEMS, was not properly reported. There were so many errors of statements he regrets its appearance. It having been sent us by the Secretary of the Convention where it was delivered, we presumed it to be correct. Dr. Haskell says it was only an extemporaneous speech. We regret he did not see the manuscript before it was sent us.

THOROUGH TRAINING.

"Bessy spoke well last evening," we said to a friend who had attended a child's entertainment with us.

"No wonder," she replied; "she knew she would be whipped if she did not."

"Why?" we rejoined. "Do you mean to say she is so cruel as that?"

"Cruel! That's the only way to train a child! She knew she would be punished if she failed, and she was equally confident of a reward if she made it a success. It is so in her home work, and in her studies at school. She is not given overmuch to do, but made to understand that whatever she does do must be done well. She is no better naturally than other children, but this training will make of her a smart woman."

After acquaintance with this mother and daughter showed us there was mutual affection, but there was also parental discipline and childish obedience.

Is it not in this way the good Lord would train us all? "As many as He loves He rebukes and chastens;" "As a man chastens his son, so the Lord chastens us."

We should have more smart children, and more smart men and women, if we had more such home and school and business training, and kept ourselves more generally in the traces.

Many years ago, while traveling in the West, we put up one day where several circus performers were dining. Near us was one who had reserved a chair for another, who soon came in sobbing as though his heart would break. He was a boy of about ten years. As he took his seat between us, the man said:

"Better dry up, my lad; you will see the time when you will be glad your master flogged you for your blunders. You could have kept on that horse if your eyes had been pealed."

"Well," the boy sobbed out, "it hurt me bad enough without the whipping."

Turning to me, the man said: "The boy is one of our circus riders, and he fell off in the ring this morning. Nothing but good

discipline will make a good rider. We all have to take it, in our day. That boy knows he will be punished if he fails in any part of his play; and he knows a merit mark means something, if he does well. So he seldom fails. He will yet make a skilful rider."

How true this is of us all. We all need training. Woe be to that found parent's child who escapes constant, intelligent, thorough training. It is better than over indulgence. It is bad enough to let a child go to the devil by letting him alone; he will go at a race speed if you push him with hurtful indulgences. Better stop him and put a harness on him, and, taking the reins in your own strong hands, guide him in the way he should go. Some colts need but little breaking in because they have been taught to mind from the first; but others that have been left to grow up wild, need to have their necks broken, almost, to make them at all tractable. Take the reins, and the whip too, if necessary, and train your boy to do something worthy of his life. He may whine, but by and by he will bless you. "Chasten him while there is hope, and set not your heart on his destruction." "No chastisement for the present seems joyous, but afterward it yields the delicious fruit of right doing."

We all need training to bring out what there is in us, and blessed is he who gets it. Sometimes it comes against our will, but always for our good if we improve it. It is often hard to take while we are getting it, yet few become distinguished for anything good, or great, or useful without it. With us all, shiftlessness, thoughtlessness and heedlessness, clumsiness, loose-jointedness and failure, are sure to follow a lack of thorough training. "Therefore lift up the hands that lazily hang down, and the palsied knees, and make for your feet a straight path, that what is lame may not be put out of joint, but healed."

A child is a man in miniature. By what you make him now you generally see what he will be. If you allow him to be a useless weed now, he will be a rank weed when grown, with perhaps a nasty noxious weed burning in his mouth. Better make him a beautiful trimmed plant of renown, bearing delicious fruit.

In fact, training, culture, pruning, is necessary as long as we live, or at least, as long as we would bear fruit. As soon as we are ready to dry up and go into decay, we need no more cultivation. But we pity a poor old man, thus useless, joyless, hopeless. We like to look on this life as a training school, where we must be kept straight and made useful, even if our jacket has to be tanned betimes to make it tough. The master loves the boy he chastises when punishment is needed, and he disciplines every son he receives. We are all children together, training for a grand time to come. Let us consider it the chief business of our stay here, and take our training bravely, gladly, dancing as we go, till our vacation comes, and we go *home*.

Over and over again, here a little and there a little, trying and trying again—this is the way improvements are made, both in ourselves and in what we do. And all this must be done with patience, perseverance, and great thoroughness. He that is discouraged at obstacles, or tires before he is through, seldom gets through. To the persevering belong success. The road to it may be long, devious and extremely tedious; but, as we trudge and toil on, earning every step by the sweat of our brow, can we see progress? That is the main thing; and even if we cannot see improvement as day by day goes by, but can see blunders, and failures, and discouragements, and get provoked at our ignorance and shortsightedness and follies, can we see progress as we look back over a long distance? Are there marks of struggle along the road that distinctly show advances, though they may be far apart? And can we see light ahead? Is there encouragement as a whole? May we be reasonably hopeful of final success? These are the important questions. Never mind the character of the road—smooth or rough, difficult or easy, city or wilderness; never mind the length of the road, or its crookedness, or its isolation, or its darkness and gloom and loneliness—is it leading in the right direction? If that is settled, we may pass on with a nimble gait and cheerful heart. *Only let us do our best.*

NOTES.

We hear that Dr. I. I. Khrustchoff has received permission to open a dental school in St. Petersburg.

* * *
The National University, Washington, D. C., is materially enlarging its capacity. The dental department will now be specially commodious and inviting.

* * *
New Mexico has now a dental law, with a board of dental examiners. All entering the dental ranks there after this must hold a certificate from this authority.

* * *
Dr. Matlack, of Cincinnati, says the author of the beautiful poem in June ITEMS, "So the World Goes," is Ella Wheeler Wilcox, not John A. Joyce, as we have it.

* * *
Congressman Price, of Wisconsin, recently said: "I am neither a crank nor a saint. I simply want the man who will sell liquor put in State prison for it, and the fellow who will drink it shut up in an insane asylum; but I would not for the world have you think I am at all radical on this question."

* * *
The best way (according to Fletcher) to use a small Bunsen, is to have it mounted with the tube horizontally, or nearly so. In such a position it never gets choked with dirt, and can be turned down safely to the smallest point of flame without the use of the air slide, and without risk of lighting back.

* * *
If the time we waste were conscientiously employed we might store our mind with knowledge, become an eminent scholar, and do more good in one day than we now do in years. It is the lazy man that is too busy for anything outside his common rut; it is the busy man who always finds time for the most important.

* * *
Of all the filling materials cement, probably, has the most good qualities. It is of good color, is adhesive and is a good preserver of teeth, but it lacks the one most essential quality—durability.

Now if we can fill a considerable portion of large cavities with a material which is capable of taking the place analagous to that of Portland cement, and protect it with gold or amalgam, we are, at last, doing much toward arriving at the ideal filling.

D. M. Clap.

FOR OUR PATIENTS.

"Those who climb must count to fall,
But each new fall will prove them climbing still."

ARE CHILDREN'S DISEASES AND DENTITION INTERDEPENDENT ?

Prof. Max Kassovitz, of Vienna, Austria, in a lecture before the Association of German Naturalists and Doctors, attacks the commonly accepted theory of supposed connection between diseases of children at the age of dentition and the process of dentition. The lecture, which is an extensive document of great interest, has been reprinted by the *Journal für Zahnheilkunde*, and among other observations contained the following conclusions :

1. In an average of 12,000 children yearly suffering, in a large number of cases, from rachitis, which he has watched in his hospital, no accidents, local or general, ascribed to difficulties of dentition in such children have been detected, in spite of the specifically acting antirachitic treatment. On the contrary, those various disturbances of the general system, which used to be produced by rachitic affections, disappeared gradually, and therefore the closely following on each other eruption of the teeth of such children, in a large majority of cases, was accompanied by a very good general condition.

2. Observations on some 500 to 700 children brought to the hospital for vaccination, failed to reveal any health disturbance which could be in any wise connected with the process of dentition, through which the children were then passing.

3. As to the special occurrences in the maxilla, no changes in the gums were observed, except the usual opacity preceding for weeks or months the eruption of the incisors and molars—never the cuspids. But this swelling, which is always covered by a perfectly normal, often somewhat paler, and never hyperemic or inflamed mucous membrane, and which never causes any pain to children when touched, or even pressed, cannot possibly be regarded as something abnormal. We would not regard the highly rounded abdomen, in consequence of an enlarged uterus, as a diseased condition.

4. The careful observation of children before and during dentition has taught us that the often noted salivation in some children

can have no connection whatever with the eruption of the teeth, as, in a majority of cases, it begins before the first eruption and very often ceases again before this has taken place, without reappearing at the succeeding eruption.

5. Just as little has the habit of some children to put their fingers into their mouth any casual or timely relation to the phenomena of dentition.

The author then shows that, with the change in the opinions, diseases in children, which are generally considered in all textbooks, both European and American, as incident to dentition, can be traced to their real causes: climatic or systemic conditions. Statistics, then, have not been read aright, for, the Professor continues, *facts* bring us to the following conclusions:

"In all diseases of childhood, which are contained in large numbers, as, for instance, in acute attacks of the respiratory organs, the same relation is shown as in alimentary disorders, namely, that the figures become larger as children are younger, and that the morbid state is greater in the months *before* dentition as during the same, and that in the period of dentition it is larger at the beginning of that period than later. But the *mortality* of children falls within the same rule, as can be shown from the official statistics of the city of Vienna.

"The number of deaths among children during five years (1884-1889):

AGE.	NUMBER.
1 month.....	10,984
2 months.....	3,183
3 months.....	2,547
1 quarter of a year.....	16,714
2 quarters of a year.....	4,637
3 quarters of a year.....	3,194
4 quarters of a year.....	2,641
1 year.....	27,186
2 years.....	6,591
3 years.....	3,113
4 years.....	1,825
5 years....	1,120

"It follows that even mortality, when considered in large numbers, is seen to be extraordinarily influenced by the age of children, but there is absolutely no question as to the rising of the same in the beginning or during the period of dentition."

AMAUROSIS CURED BY EXTRACTION OF TEETH.

L'Odontologia Spagnuola records two cases of amaurosis as cured by the extraction of teeth. In one case the total loss of sight came about unprecedented by the usual symptoms, and without any pains. The patient could not distinguish the light from the darkness. The pupils were dilated and immobile.

All the means to cure the amaurosis were unavailable. The sixth upper right tooth was very carious. On this indication the tooth was removed. After a few days the patient began to distinguish the surrounding objects, and regained soon after his sight, without undergoing any other treatment.

The other case was that of an eleven years old boy, who was suddenly cured of amaurosis in the clinic of Dr. Hancock, after the extraction of four temporary and two permanent teeth. Both cases belong to the so-called *amaurosis reflectiva*.

How true it is that we must catch and use good thoughts, suggestions and purposes as they fly. Let them once slip by us, and they may never return; and if they do return they have become too stale to attract special attention. We all have them—bright, crisp, useful—and as they fly by on golden beams we admire them; but if we do not use them, how soon we forget them. Yet our conduct toward them makes us the smart man or the dull man, the successful man or the failure. Success is for us all, if we are ready for it when the golden opportunity is passing. But it came flitting on such tiny rays—dancing, laughing, coaxing—and for such a short time, that we are only amused, and hardly realize, till it is gone, that it was for us, and that it came to stay. So it goes elsewhere to seek better appreciation. Our best thoughts, our wisest conceptions, our most useful plans, do not picture themselves on our mind often. But when they do, it is the signal that we have connection with the great central battery of the universe. Our attention must not flag; time is precious, inspiration is but a spark. Seize the opportunity or darkness will come again. But if that spark arouses our slumbering energies, it is sure to set them all on fire. Then inspiration impels us and the set time has come for our fortune.

NOTICES.

CHANGE OF RESIDENCE.—Mrs. Widow Bouché, dentist, has the honor to announce to her numerous clients, that she has transferred her residence to rue Jean de la Fontaine, No. 2, and that she continues, as in the past, the extraction of teeth.

Moreover, she undertakes at all times the repairing of gentlemen's hats, felt, silk or straw, at reasonable prices.

Madame Bouché visits residences on demand. *L'Odontologie.*

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The twenty-fourth annual meeting of the California Dental Association was held at San Francisco, June 13th to 16th.

The following officers were elected for the ensuing year:—President, L. A. Teague, 10 Geary street, San Francisco; 1st Vice-President, I. W. Hays, Jr., Grass Valley; 2d Vice-President, C. L. Goddard, San Francisco; 3d Vice-President, W. F. Lewis, Oakland; Recording Secretary, W. J. King, San Francisco; Corresponding Secretary, C. E. Post, 14 Grant avenue, San Francisco; Treasurer, T. N. Iglehart, San Francisco.

Chas. E. Post, D.D.S., Corresponding Secretary.

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The seventh annual meeting of the Colorado State Dental Association, convened June 6th, in Denver, a good attendance being present. Fourteen essays were carefully prepared and read; they were well discussed with much good to all present. The election of officers, resulted as follows: P. T. Smith, D.D.S., Denver, President; W. S. Brennaman, D.D.S., Leadville, First Vice-President; W. R. Sinton, D.D.S., Colorado Springs, Second Vice-President; A. H. Sawins, D.D.S., Denver, Recording Secretary; Sarah May Townsend, D.D.S., Denver, Corresponding Secretary; William Smedley, D.D.S., Denver, Treasurer; Executive Committee, H. A. Finn, D.D.S., Denver, A. C. Watson, D.D.S., Denver, and George H. Harlan, D.D.S., Montrose. Dr. M. A. Bartleson, Denver, was chosen delegate to the World's Columbian Dental Congress at Chicago, August 14th to 19th. Dr. Thomas Goddes, of London, England, formerly Dean of the Dental Department of the University of Denver, was elected to honorary membership. Eleven were elected as members of the Association. Adjourned, to meet at Glenwood Springs, the first Tuesday in June, 1894.

Sarah May Townsend, Corresponding Secretary.